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CITY OF DURBAN

Annual Report

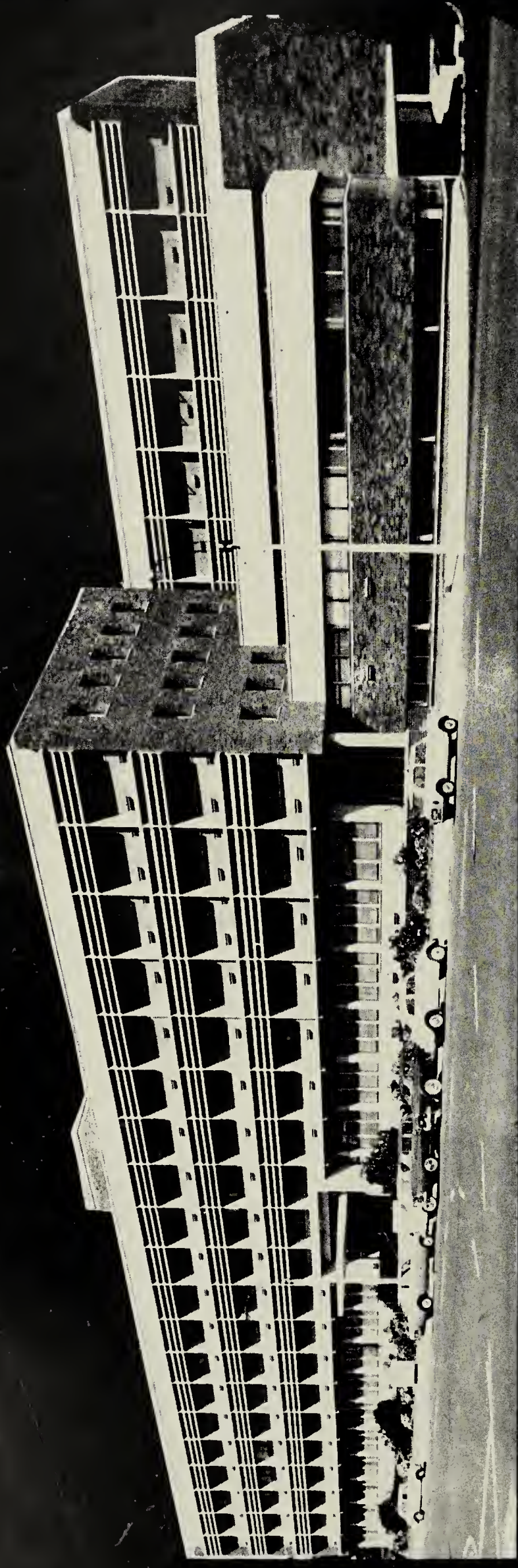
OF THE

CITY MEDICAL OFFICER OF HEALTH

YEAR ENDED 31st DECEMBER 1964



22501417623



CITY HEALTH DEPARTMENT,
JUNE, 1964.

ANNUAL REPORT : 1964

REPORT 'A'

	Introduction	
I	Historical and Geographical Data	1
II	Vital Statistics	4
III	Infectious Diseases	7
IV	Other Communicable Diseases	16
V	Tuberculosis	18
VI	Venereal Diseases	30
VII	Immunisation	33
VIII	Maternal and Child Health	37
IX	Health Education	44
X	Health Inspection	49
XI	Milk Supplies	59
XII	Field Hygiene	67
XIII	Allied Health Services	71
XIV	General	75
XV	Staff and Financial Summary	83

REPORT 'B'

	Housing	93
	Appendix 'A' : Causes of Death	100
	Appendix 'B' : Causes of Death: Infants	105
	Appendix 'C' : Cato Manor	108
	Appendix 'D' : Establishment of an Oil Refinery	111

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City Health Department,
Municipal Centre,
DURBAN.

14th January, 1966.

His Worship the Mayor and Councillors
of the City of Durban.

Mr. Mayor, Ladies and Gentlemen,

I have the honour to present the 62nd Annual Report on the public health of Durban together with an account of the activities of the City Health Department for the year ended the 31st December, 1964.

For the second year in succession the City was faced with the threat of smallpox (*variola minor*). In May two Bantu children, who had some days earlier arrived in Durban from Zululand and who were temporarily resident in the premises of a local European girls' high school, were found to be suffering from smallpox. In June a further four Bantu cases occurred in the City and the source of the infection was doubtless from an area near the kwaMashu Bantu Township but outside the City boundary, where four other cases were discovered. All the above cases were subsequently proven to be smallpox. In the same month a clinically suspect Bantu case was found in Clairwood. In August a Bantu child from Swaziland was reported from the Chesterville Bantu Township as suffering from the disease and this subsequently proved the correct diagnosis.

On each occasion intensive but planned vaccination campaigns were carried out. The ready co-operation of the public of all races resulted in 79,804 vaccinations being carried out in the course of the specially organised campaigns out of over 130,000 vaccinations performed during the whole year.

In regard to notifiable diseases of a less formidable nature, typhoid fever cases increased in comparison with the previous year, the cases occurring mainly amongst the Bantu community. The incidence of poliomyelitis was much lower and a further reduction in the number of cases of diphtheria was recorded. Encephalitis cases showed a decrease. No cases of rabies occurred in the City but the prevalence of the disease was good cause for an intensive anti-rabies inoculation of dogs conducted by the State during the year. There is little doubt such campaigns will be necessary at least every two years in the future.

Pulmonary tuberculosis continued to remain the major single public health problem confronting the City; the number of notifications showed a slight increase over 1963 although the reason for this may be attributed, in part, to the amendment to the Public Health Act, making the disease in children under 5 years of age notifiable on the finding of a positive tuberculin test only. The number of B.C.G. immunisations performed in the City showed an increase, although the benefits of these vaccinations will not be apparent for some years to come.

Immunisation against preventable diseases continued at a high level, although, as in the past, the number of children completing the full course of immunisation against diphtheria/whooping cough/tetanus and poliomyelitis fell short of that desirable. None the less it is gratifying to see that the number of these immunisations in the under one year of age group increased substantially.

The infant mortality rates in the Bantu and Coloured communities continued to decrease although little change occurred in European and Asiatic rates. Attendances at the Child Health Clinics maintained

an appreciable increase and two additional clinics were put into operation in the course of the year. The State subsidised powdered milk scheme continued most satisfactorily and over 147,000 lbs of dried milk were issued from the Council's Child Health Clinics.

The exfoliative cytology scheme for the early detection of uterine cancer was authorised to continue on a permanent basis by the City Council in 1964. Eighteen cases of proven cancer were detected from 2,915 smears examined during the year.

Health inspectional activities continued at a high standard and an increase in the inspections of a routine nature were recorded. Biological control of mosquitoes in the City was maintained satisfactorily and the adoption of this method of control by the South African Railways Administration led to a marked improvement of the position in the Bayhead area.

The adoption by the City Council in December 1964 of the City Engineer's planned programme to provide water-borne sewerage to the unsewered areas of the City is viewed as a most important milestone in this major problem related to the environmental health of the community and it is hoped that no delays will occur in its implementation but rather the reverse. Atmospheric pollution continued to receive the attention of the City Engineer's Department and this Department assisted wherever possible both from representation on various committees and through the Offensive Trade Regulations. The establishment of an Oil Refinery in Durban and the steps taken to prevent all forms of pollution therefrom is set out fully in an appendix to this report. There is an ever growing demand for housing in the City, particularly amongst the lower income groups and especially in the Coloured community.

Continued progress in Chatsworth Indian Housing scheme is remarked upon, whilst Bantu housing needs are being met both by the Council in developing the Umlazi Township on behalf of the State and the headway made in the kwaMashu Township. It is noteworthy that this year marked the complete elimination of the Cato Manor Slum area and this subject is particularly commented upon in the report.

In the midyear this Department took occupation of new purpose designed headquarters, which included up-to-date clinic facilities, a health education auditorium and a modern milk laboratory. There is no doubt that the morale and efficiency of the Department has been further uplifted as a result of the move.

The staff position remained, on the whole, satisfactory, although it did not prove possible to fill the additional post of Assistant Medical Officer of Health created in 1963.

To His Worship the Mayor and City Councillors I must express my thanks for their continued interest and assistance in public health matters. My particular thanks are due to the Chairman and Members of the Public Health Committee for their encouragement and support at all times. My appreciation of the ready help and consideration afforded me by other Heads of Departments and their staffs is recorded.

To the Press and the South African Broadcasting Corporation a debt of gratitude is owed for their unfailing support in bringing to the notice of the citizens matters of public health importance and interest. Especial mention is made of the publicity given during the smallpox threats when the well balanced news and co-operation with this Department maintained an atmosphere of calm in the City yet contributed materially to the success of the vaccination campaigns.

In conclusion I would like to express my thanks to all members of the City Health Department for their loyalty and unfailing enthusiasm

and would particularly remark upon their team spirit and high standard of work.

I have the honour to be

Ladies and Gentlemen,

Your obedient Servant,

C. R. MACKENZIE

M.B., B.Ch., D.P.H., D.T.M. & H.

CITY MEDICAL OFFICER OF HEALTH



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R E P O R T 'A'

I. HISTORICAL AND GEOGRAPHICAL DATA

Durban, situated on the eastern coast of South Africa, is the Republic's principal maritime City. Since Durban's proclamation as a borough in 1854 when the population was 1,200, there has been a marked growth and today some 640,000 persons are resident in the City.

This rapid expansion can be attributed to the following factors:-

- (a) Seaport: Durban has developed into South Africa's most important harbour both for imports and exports and an amount in excess of 10 million tons of cargo is handled annually. This is more than 50 per cent of the Republic's maritime tonnage.
- (b) Industry: Rapid industrial expansion has taken place since the 1939/45 War and large areas of land, particularly in the southern part of the City have been made available for private enterprise. The annual yield from manufacturing industries amounts to many hundred million rand.
- (c) Commerce: By virtue of its sub-tropical climate, Durban is the country's premier holiday resort to which a quarter of a million people make their way annually to enjoy the vast range of attractions provided for them. This has resulted, from the public health viewpoint, in the establishment of numbers of food handling businesses such as hotels, restaurants, milk bars, food vending vehicles and machines, particularly in the vicinity of the foreshore which constitutes the visitors' major playground.
- (d) Extensions of Boundaries: The Durban Borough Extension Ordinance, 1931, became effective from 1st August, 1932, and resulted in an addition of 57 square miles to the existing area of 13 square miles following the incorporation of 5 health committee areas contiguous to Durban. The population almost doubled, increasing from 125,000 to 215,000. Subsequent extensions, especially the Indian Township of Chatsworth to the south and the Bantu Township, kwaMashu, to the north, now gives the local authority jurisdiction over an area in excess of 94 square miles.

Valuation (1963 figures in parenthesis):

	<u>Land</u>	<u>Buildings</u>
Rateable Values	R146,657,430 (146,213,560)	R275,367,460 (R263,898,210)
Total Values (excluding Chatsworth, kwaMashu and North-Eastern Extremity of Bluff)	R181,340,930 (R178,305,320)	R319,465,760 (R293,913,740)
<u>Rates</u> (including Water Rate)	Land: 3.20 cents in Rand Buildings: 1.60 " " "	
<u>Agricultural</u> (excluding Water Rate of .41 cents in Rand)	Land: 1.395 " " " Buildings: 0.595 " " "	
<u>Chatsworth</u> (Total Values in brackets)	Land: R1,535,240 (R2,314,480) Buildings: R1,366,520 (R1,479,790)	
<u>Rates</u>	Land: 1 1/16th cents in Rand Buildings: 7/16ths " " "	

North Eastern Extremity of Bluff (incorporated 1962)

Rateable Values

(Total Values in brackets)

Land:

R1,275,480 (R2,307,460)

Buildings:

R3,540,920 (R3,932,080) .

Meteorological Data

Rain fell on 125 days during the year, a total of 37.85 inches being recorded compared with 135 days and 42.50 inches respectively for the previous year.

The average number of hours of sunshine per day was 6.6 as against 6.4 in 1963.

Full data is reflected in the table overleaf, this information being provided by courtesy of the Weather Office, Louis Botha Airport.

METEOROLOGICAL DATA

1964 Month	24 Hours Shade Temperature ($^{\circ}$ C)			Relative Humidity		Barometer Readings (Inches)			Rainfall			Sunlight	
	Maximum	Minimum	Mean	Minimum	Average	Maximum	Minimum	Mean	m.m.	Inches	No. of Days on which rain fell	Highest Fall (m.m.)	Average Hours of Sunshine per day
January	27.4	20.4	23.7	53	79	30.22	29.58	29.94	195.5	7.70	15	46.2	6.05
February	27.6	20.5	23.9	47	80	30.19	29.53	29.87	84.6	3.33	11	43.5	7.19
March	28.8	20.8	24.7	48	79	30.17	29.68	29.96	82.6	3.25	14	44.5	6.29
April	25.5	16.2	20.6	22	74	30.42	29.65	30.06	63.1	2.48	10	24.6	6.80
May	24.4	12.0	18.3	34	77	30.42	29.83	30.14	12.5	0.49	3	11.6	8.14
June	22.9	7.9	15.0	16	70	30.53	29.66	30.07	19.1	0.75	3	12.1	7.76
July	22.3	7.8	15.0	16	70	30.58	29.81	30.22	32.8	1.29	7	22.8	8.08
August	22.3	10.9	16.8	24	70	30.58	29.74	30.17	3.9	0.15	5	3.2	7.17
September	21.9	14.8	18.8	12	77	30.44	29.69	30.11	51.2	2.02	15	14.4	5.60
October	23.3	16.2	19.5	49	81	30.53	29.65	30.05	250.6	9.87	14	83.0	3.69
November	24.9	17.1	21.2	42	81	30.31	29.55	29.99	90.1	3.55	12	17.6	5.82
December	26.7	19.1	23.4	40	81	30.20	29.55	29.95	75.4	2.97	16	28.0	6.70
	24.8	15.3	20.1	12	76	30.58	29.53	30.04	961.4	37.85	125	83.0	6.60

II. VITAL STATISTICS

Population (Estimated)

Europeans	175,404	(27.28%)
Coloureds	28,160	(4.38%)
Bantu	195,359	(30.39%)
Asiatics	243,955	(37.95%)
All Races	642,878	

Births

Race	Legitimate				Illegitimate				Totals			
	M	F	Total	1963	M	F	Total	1963	M	F	Total	1963
European	1594	1598	3192	3286	66	75	141	109	1660	1673	3333	3395
Coloured	500	516	1016	1003	163	146	309	291	663	662	1325	1294
Bantu	2947	2890	5831	5417	1637	1668	3305	3521	4584	4558	9142	8938
Asiatic	4204	3821	8025	7860	75	83	158	141	4279	3904	8183	8001
Totals	9245	8825	18070	17566	1941	1972	3913	4062	11186	10797	21983	21628

Crude Birth Rates (No. of births per 1,000 Population - 1963 in parenthesis)

European	19.00	(19.70)
Coloured	47.05	(47.36)
Bantu	46.80	(46.42)
Asiatic	33.54	(33.71)
All Races	34.19	(34.36)

The upsurge which took place in the Bantu birth rate in 1963 has been maintained in 1964. As suggested in my previous report it appears that this may well have been due to a large extent to Bantu mothers from rural areas availing themselves of clinic and hospital facilities within the City and using accommodation addresses.

Stillbirths (Rates per 1,000 Live Births - 1963 figures in parenthesis)

	<u>Number</u>		<u>Rates</u>	
European	36	(22)	10.92	(6.52)
Coloured	21	(29)	16.10	(22.92)
Bantu	251	(193)	28.23	(22.07)
Asiatic	202	(135)	25.51	(17.16)
All Races	510	(379)	23.75	(17.84)

The reduction in the European rate of roughly 4 per 1,000 live births achieved in 1962 and 1963 was not maintained. The present figure (10.92) is, however, in keeping with the average rate prior to 1962.

Bantu and Asiatic rates, although higher than for 1963, compare favourably with the general trend over the past decade.

Illegitimate Births (as a Percentage of Total Births - 1963 figures in parenthesis)

	<u>Number</u>	
European	4.23	(3.21)
Coloured	23.32	(22.49)
Bantu	36.15	(39.39)
Asiatic	1.93	(1.76)
All Races	17.80	(18.78)

The European rate has increased since 1955, viz. 1.10 to 4.23.

The Coloured and Asiatic rates have remained fairly constant, whilst that of the Bantu has declined appreciably.

Deaths

Race	Total Deaths				Crude Death Rate per 1,000 population	
	Male	Female	Total	(1963)	1964	(1963)
European	944	795	1,739	(1,689)	9.91	(9.80)
Coloured	133	109	242	(233)	8.59	(8.53)
Bantu	1,335	965	2,300	(2,304)	11.77	(11.97)
Asiatic	1,019	762	1,781	(1,747)	7.30	(7.36)
All Races	3,431	2,631	6,062	(5,973)	9.43	(9.49)

The death trend for Europeans, Coloureds and Asiatics has maintained a fairly constant level over the past decade. During this period, however, the Bantu Death Rate has decreased remarkably (from 23 to 11 per 1,000 population) but now appears to be steady, there being a decrease of only 0.20 per thousand over the past two years.

A study of the causes of death shows that the Heart and Circulatory System are responsible for by far the majority of deaths in the community. It is certainly markedly so in the case of Europeans, Coloureds and Indians, although it accounts for only 5.35% of the Bantu deaths.

The 148 deaths from road accidents, an increase over the previous year of 24, represents a tragic waste of human life.

Infant Mortality (Deaths of Infants under the age of 1 year and rate per 1,000 Live Births - 1963 figures in parenthesis)

	<u>Number of Deaths</u>		<u>Rate</u>	
European	80	(92)	24.64	(24.31)
Coloured	58	(59)	44.48	(47.43)
Bantu	930	(991)	104.60	(108.63)
Asiatic	435	(417)	54.50	(53.90)
All Races	1,503	(1,559)	69.99	(71.34)

Since 1955 the rate for all races has improved remarkably, showing a reduction of 50%. This is principally due to the Bantu group which has shown a decline from 307 to 104. The rate for the Coloured community continues to show steady improvement whilst the European and Asiatic rates have remained fairly constant.

Maternal Deaths (Deaths from causes related to childbirth and rate per 1,000 Live Births - 1963 figures in parenthesis)

	<u>Number of Deaths</u>	<u>Rate</u>
European	1	0.30 (-)
Coloured	-	- (-)
Bantu	8	0.90 (1.94)
Asiatic	3	0.38 (1.40)
Total	12	0.56 (1.32)

Maternal deaths remain at a low figure and give no cause for comment.

PRINCIPAL CAUSES OF DEATH : 1964 (1963 figures in brackets)

a. In respect of All Deaths

Cause of Death	Detailed List Numbers	Europeans		Coloureds		Bantu		Asiatics		All Races	
		No.	%	No.	%	No.	%	No.	%	No.	% 1963
Tuberculosis (All forms)	001-019	9 (14)	.51 (.83)	8 (7)	3.31 (3.00)	137 (154)	5.96 (6.68)	35 (34)	1.97 (1.95)	189 (209)	3.12 (3.50)
Neoplasms	140-239	265 (277)	15.24 (16.40)	20 (19)	8.26 (8.15)	89 (95)	3.87 (4.12)	68 (104)	3.82 (5.95)	442 (495)	7.29 (8.30)
Vascular Lesions of C.N.S.	330-334	184 (191)	10.58 (11.31)	12 (13)	4.96 (5.58)	70 (61)	3.04 (2.65)	173 (152)	9.71 (8.70)	439 (417)	7.24 (6.98)
Heart and Circulatory System	400-468	631 (646)	35.29 (38.25)	45 (30)	18.60 (12.88)	123 (141)	5.35 (6.12)	405 (370)	22.74 (21.18)	1204 (1187)	19.86 (19.87)
Pneumonias	490-493	138 (109)	7.94 (6.45)	25 (18)	10.33 (7.73)	225 (228)	9.78 (9.90)	306 (307)	17.18 (17.57)	594 (662)	11.45 (11.08)
Enteritis and Diarrhoea	571-572	13 (9)	.75 (.53)	14 (19)	5.79 (8.15)	253 (293)	11.00 (12.72)	110 (119)	6.18 (6.81)	390 (440)	6.43 (7.37)
Road Accidents	810-835	47 (23)	2.70 (1.36)	11 (12)	4.55 (5.15)	64 (52)	2.78 (2.26)	26 (37)	1.46 (2.12)	148 (124)	2.44 (2.08)
Ill-defined and Unknown	780-793 and 795	91 (84)	5.23 (4.97)	30 (26)	12.40 (11.16)	553 (343)	24.04 (14.89)	100 (85)	5.61 (4.87)	774 (538)	12.77 (9.01)

b. In respect of Infant Deaths

Cause of Death	Detailed List Numbers	Europeans		Coloureds		Bantu		Asiatics		All Races	
		No.	%	No.	%	No.	%	No.	%	No.	% 1963
Pneumonias	490-493	3 (4)	3.75 (4.38)	9 (8)	15.52 (13.33)	111 (119)	11.94 (12.53)	88 (77)	20.23 (18.16)	211 (208)	14.04 (13.72)
Enteritis and Diarrhoea	571-572	4 (3)	5.00 (3.66)	10 (13)	17.24 (21.67)	202 (217)	21.72 (22.84)	84 (80)	19.31 (18.87)	300 (313)	19.96 (20.65)
Congenital Malformations	750-759	14 (10)	17.50 (12.20)	2 (4)	3.45 (6.67)	16 (20)	1.72 (2.10)	19 (21)	4.37 (4.95)	51 (55)	3.39 (3.63)
Post Natal Asphyxia	762	4 (12)	5.00 (14.63)	3 (2)	5.17 (3.33)	21 (40)	2.26 (4.20)	17 (10)	3.91 (2.35)	45 (64)	2.99 (4.22)
Infections of Newborn	763-768	3 (2)	3.75 (2.44)	4 (4)	6.90 (6.67)	44 (50)	4.73 (5.26)	46 (45)	10.57 (10.61)	97 (101)	6.45 (6.56)
Ill-defined and Prematurity	773-776	34 (38)	42.50 (46.34)	19 (16)	32.76 (26.67)	166 (190)	17.85 (20.00)	97 (117)	22.28 (27.60)	316 (361)	21.02 (23.71)

III. INFECTIOUS DISEASES

One local case of formidable epidemic disease was notified during the year. This was a case of smallpox (Variola Minor) discovered in the kwaMashu Bantu Township. In addition, a further ten cases of Variola Minor (imported and all Bantu) and their contacts, were admitted to the Fynnlands Quarantine Station. Six of these cases came from the adjacent Newlands area, two from the Nongoma district of Zululand, one from Swaziland and the other contracted the disease in a local hospital. These cases will be dealt with later in this section.

Set out below is a table showing the number and racial distribution of the confirmed local cases of notifiable infectious diseases notified to this Department during the year. The attack rate for all races per 1,000 population is also shown.

Disease	C i t y					Attack Rate
	E	C	B	A	Total	
Poliomyelitis	-	-	7	1	8	0.0124
Typhoid	2	1	30	10	43	0.0668
Diphtheria	5	2	15	11	33	0.0513
Encephalitis	8	-	3	3	14	0.0218
Scarlet Fever	59	-	-	-	59	0.0918
Leprosy	1	-	9	1	11	0.0171
Gonococcal						
Ophthalmia	-	3	1	1	5	0.0078
Puerperal						
Sepsis	-	-	5	3	8	0.0124
Meningococcal						
Meningitis	5	1	3	2	11	0.0171
Trachoma	-	6	1	8	15	0.0233
Smallpox	-	-	1	-	1	0.0016
Ophthalmia						
Neonatorum	-	-	3	1	4	0.0062

There have been fewer notifications of poliomyelitis, encephalitis, gonococcal ophthalmia and trachoma compared to 1963, while there has been a slight increase in meningococcal meningitis cases. Notifications of other diseases have remained very much on a par with those of the previous year.

During December 1964, Tetanus (all forms) was declared a notifiable disease but by the end of December there had not been any notifications.

Smallpox

There were three different episodes of Smallpox and one of suspect smallpox in Durban during 1964, involving 11 cases, only one of which was a local case.

Episode 1: This involved two Bantu children who had been brought to Durban from Nongoma in Zululand, four days before their rash appeared. These children, aged 7 years and $1\frac{1}{2}$ years, arrived with their mother on 2nd May, 1964 and stayed in the grounds of a local European Girls' High School, where the father was employed. Because of the rash on the elder child, the father took his children to the outpatient department of a local hospital where smallpox was suspected and this Department immediately notified. These two children were admitted to the Fynnlands Quarantine Station and the diagnosis was subsequently confirmed by isolation of the virus. An interesting feature was that although the elder sister had a classical smallpox rash, the younger brother had only a few scattered vesicles

over the face and arms which could easily have been regarded as chickenpox, were it not for evidence of contact with his sister. An intensive vaccination campaign in the Durban North area where these cases had been staying ensued together with systematic contact follow-up and surveillance. Fortunately no further cases occurred.

Episode 2: Involved 8 cases, 4 being discovered in Durban while the remaining 4 were found at their homes in the "Richmond Farm Area" just outside the kwaMashu Bantu Township. All cases were admitted to the Fynnlands Quarantine Station in Durban. All 8 cases were epidemiologically related.

The first case was discovered on 30th June, 1964 in the Fever Ward of a local hospital, where the child had been admitted direct from Richmond Farm on the evening of 29th June, 1964 as a case of chickenpox. This child had luckily been placed on a verandah with only 4 other chickenpox cases and was fairly well separated from the rest of the ward. These 4 close contacts were treated prophylactically with "Marboran" and vaccinated, but one child subsequently developed smallpox - exactly 12 days later. Vaccination in this child did not "take" and there were no previous vaccination marks. There were no further secondary cases in the hospital.

Case 3, already in the healing stage, was spotted by an alert Health Visitor on district work and follow-up of the contacts at the home address in KwaMashu Township led to the finding of case 4 (early papular stage.) These cases were blood relations of Case 1 from the Richmond Farm area - from whence they had come only one to two weeks earlier. Case 4 was possibly infected at the kwaMashu address and was thus accepted as a local case. As a result of these cases 4 more smallpox cases were discovered by the State Health Department at the Richmond Farm home from whence cases 1, 3 and 4 had originally come. Intensive vaccination campaigns followed, especially in the kwaMashu Bantu Township, and no further cases occurred.

Episode 3: Concerned a Bantu child of 2 years who had been brought from Swaziland suffering from the disease. This case arrived in Durban on the 26th August, 1964 and was discovered in the Chesterville Bantu Township after being reported to the Department by a Bantu Nurse Aide. Again, intensive vaccination of this area was undertaken and there were no further cases.

It is recalled that a massive vaccination campaign covering the whole of Durban was embarked upon in 1963 after the discovery of a case of smallpox in Durban - the first since 1951. The good coverage obtained during that time, together with the renewed campaigns with each of the three episodes of smallpox this year, was probably a major factor in holding the spread of the disease to a minimum.

Episode 4: In addition to the abovementioned smallpox cases a fourth episode of a suspect smallpox case occurred on the 16th June 1964. This was a Bantu male aged 18 years from the Umzinto district who was seen at the outpatient department of a local hospital and then immediately admitted to the Fynnlands Quarantine Station. As this case had spent one night in Clairwood, intensive vaccination of this area was carried out. The final clinical diagnosis, however, was severe impetigo associated with chickenpox, and laboratory tests were all negative for smallpox.

The following table depicts the vaccinations performed during the above episodes.



EPISODE 3: This child was brought from Swaziland. Rash at least 7 days.



Case of Smallpox - Variola Minor. Rash - 5 days.

EPISODE 2: This was the patient admitted to hospital as a case of chickenpox on the afternoon of 29th June, 1964.

Episode	Dates	Vaccinations				
		E	C	B	A	Total
1	13/5/64 to 23/5/64	17,567	580	9,278	3,327	30,752
2	30/6/64 to 17/7/64	-	-	28,225	-	28,225
3	31/8/64 to 4/9/64	-	-	9,209	-	9,209
4	16/6/64 to 25/6/64	59	661	1,387	9,511	11,618
						79,804

Typhoid Fever

The table overleaf sets out the notifications, deaths and appropriate rates for Durban since 1940. The 43 cases notified during 1964 is slightly higher than the previous year's total. Twenty-six of these cases occurred during the months March to July. The 3 Bantu deaths were all post mortem diagnoses.

Three of the Asiatic cases lived in close proximity in the Clairwood area, but there was no connection between them, and intensive investigation did not reveal any source of infection.

One of the European cases was a student medical technologist who worked in the Bacteriological Section of a local Provincial Hospital Laboratory, and it was considered probable that this was the source of infection. It is recorded that this student received two previous T.A.B. injections.

The Indian townships of Merebank and Chatsworth accounted for one case each of typhoid fever, whilst 10 cases were reported from the Bantu township of kwaMashu. Six cases originated from the remaining shacks in the Cato Manor Emergency Camp, Matatiele, Good Hope and Chateau Estates areas.

Each case of typhoid fever was thoroughly investigated in an attempt to establish the source of infection, and this led to the discovery of 3 typhoid carriers. All were faecal carriers, one case also being a urinary carrier, and all were admitted to hospital for special treatment. A careful watch is maintained over carriers after discharge from hospital and stools and urines are examined at regular intervals. One of the carriers, an Asiatic adult female, gave a particularly interesting history in that it appeared from descriptions of symptomatology that she had probably infected at least five other members of her family with the disease over the past eight years, one of whom died.

TYPHOID : NOTIFICATIONS AND DEATHS 1940 TO 1964

(NOTIFICATION RATE PER 1,000 POPULATION : MORTALITY RATE PER CENT OF TOTAL NOTIFICATIONS)

Year	EUROPEAN			COLOURED			BANTU			ASIATIC			ALL RACES		
	Notifications		Deaths	Notifications		Deaths	Notifications		Deaths	Notifications		Deaths	Notifications		Deaths
	No.	Rate		No.	Rate		No.	Rate		No.	Rate		No.	Rate	
1940	52	.56													
1940	52	.56	5	4	.49	9.62	42	.60	12	28.57	23	7	121	.47	24
1941	24	.26	2	1	.12	8.33	70	.98	23	32.86	15	6	110	.48	31
1942	123	1.16	10	13	1.53	8.13	164	2.21	39	23.78	22	10	322	1.15	60
1943	68	.64	6	10	1.17	8.82	156	2.13	34	21.79	71	15	305	1.09	57
1944	37	.34	6	3	.34	16.21	108	1.36	37	34.26	46	11	194	.69	54
1945	17	.15	2	5	.58	11.76	62	.86	19	30.65	28	6	112	.39	28
1946	18	.14	—	7	.68	—	113	1.04	38	33.63	39	9	177	.49	47
1947	14	.11	—	21	1.98	—	108	.99	29	26.85	67	10	210	.57	41
1948	7	.05	1	7	.64	14.29	57	.52	9	15.79	24	4	95	.26	14
1949	12	.09	—	5	.44	—	21	.19	8	38.10	10	3	48	.13	11
1950	16	.12	—	2	.16	—	36	.28	15	41.67	40	2	94	.24	18
1951	7	.05	—	1	.07	—	66	.49	24	36.36	24	6	98	.23	30
1952	9	.07	—	1	.06	—	54	.38	10	18.52	37	2	101	.23	12
1953	4	.03	—	—	—	—	53	.36	11	20.75	16	—	73	.16	11
1954	5	.04	—	4	.22	—	74	.48	9	12.16	9	2	92	.19	11
1955	8	.05	—	3	.16	—	73	.44	4	5.48	16	—	100	.20	4
1956	5	.03	—	1	.05	—	52	.30	3	5.77	9	—	67	.13	3
1957	6	.04	1	1	.04	16.66	110	.61	6	5.45	5	1	122	.22	8
1958	7	.04	—	5	.19	—	246	1.32	22	8.13	20	2	278	.49	24
1959	6	.04	—	1	.04	—	280	1.45	21	7.50	16	2	303	.51	24
1960	8	.05	1	4	.16	12.50	71	.39	3	4.22	7	—	90	.16	4
1961	2	.01	—	2	.08	—	39	.21	2	5.13	16	1	59	.10	3
1962	5	.03	—	—	—	—	25	.13	—	—	11	—	41	.07	—
1963	1	.01	—	3	.11	—	25	.13	1	4.00	6	—	35	.06	1
1964	2	.01	—	1	.04	—	30	.15	3	10.00	10	—	43	.07	3

Diphtheria

The table overleaf sets out the notifications, deaths and appropriate rates for Durban since 1940. The 1964 total of 33 cases, represents a further decrease compared to the previous year. The importance of adequate immunisation against this disease cannot be overstressed and constant vigilance must be kept. Health education programmes amongst parents and scholars continue in order to increase the herd immunity by intensifying immunisation of children. This is a tiring and never-ending task, but a most rewarding one as the steady decline depicted on the table overleaf demonstrates.

Of the 33 notifications, 26 were clinical cases, and 7 were carriers. The immunisation state of these cases is depicted hereunder:-

	26 clinical cases	7 carriers
3 doses vaccine	2	6
2 doses vaccine	-	-
1 dose vaccine	1	-
No previous immunisation	23	1

As expected the carriers were found mostly among individuals fully immunised against diphtheria rather than among non-immunised persons.

Seventeen of the cases were under the age of 5 years, while 8 were in the age group 5 to 9 years, and 5 were in the group 10 - 14 years. Of the seven cases that died, none had had any previous immunisation against the disease.

DIPHTHERIA : NOTIFICATIONS AND DEATHS : 1940 to 1964 (Notification Rate per 1,000 Population : Mortality Rate per cent. of Total Notifications)														
EUROPEAN					COLOURED					BANTU				
Year	Notifications		Deaths		Notifications		Deaths		Rate	Notifications		Deaths		Rate
	No.	Rate	No.	Rate	No.	Rate	No.	Rate		No.	Rate	No.	Rate	
1940	194	2.10	3	1.55	21	2.60	—	0.00	16	1.23	2	12.50	23	0.26
1	228	2.44	5	2.19	18	2.18	—	0.00	42	0.59	7	16.67	8	0.09
2	262	2.48	2	0.76	26	3.07	1	3.85	63	0.85	4	6.35	14	0.15
3	295	2.76	9	3.05	24	2.80	2	8.33	44	0.60	2	4.55	15	0.16
4	416	3.84	7	1.68	74	8.43	—	0.00	73	1.01	16	21.92	36	0.37
5	255	2.33	6	2.35	36	4.01	1	2.78	116	1.61	9	7.76	37	0.37
6	154	1.23	7	4.55	17	1.66	1	5.88	64	0.59	7	10.94	38	0.33
7	156	1.23	4	2.56	24	2.26	2	8.33	110	1.01	9	8.18	46	0.39
8	73	0.57	1	1.37	8	0.73	—	0.00	93	0.85	12	12.90	18	0.15
9	95	0.73	—	0.00	21	1.85	2	9.52	66	0.60	12	18.18	39	0.32
1950	145	1.10	1	0.69	34	2.65	2	5.88	124	0.97	18	14.52	58	0.45
1	58	0.45	2	3.45	14	0.94	2	14.29	150	1.12	24	16.00	47	0.32
2	50	0.38	4	8.00	7	0.45	—	0.00	103	0.73	19	18.45	51	0.34
3	39	0.28	2	5.13	26	1.51	5	19.23	76	0.51	19	25.00	49	0.32
4	25	0.17	1	4.00	8	0.44	—	0.00	48	0.30	6	12.50	19	0.12
5	75	0.50	1	1.33	34	1.82	2	5.88	102	0.61	16	15.69	69	0.42
6	70	0.46	5	7.14	13	0.67	1	7.69	43	0.24	17	39.53	69	0.42
7	38	0.25	4	10.53	5	0.21	—	0.00	37	0.21	11	29.73	31	0.16
8	38	0.25	3	7.89	6	0.24	—	0.00	57	0.31	13	22.81	70	0.34
9	24	0.15	—	0.00	12	0.46	1	8.33	55	0.29	4	7.27	24	0.11
1960	9	0.06	1	11.11	7	0.28	—	—	56	0.31	6	10.71	22	0.10
1	8	0.05	—	0.00	4	0.16	—	0.00	63	0.34	11	17.46	28	0.12
2	10	0.06	1	10.00	5	0.19	—	0.00	46	0.24	7	15.22	9	0.04
3	3	0.02	—	—	6	0.22	1	16.67	17	0.09	1	5.88	12	0.05
4	5	0.03	—	—	2	0.07	—	—	15	0.08	2	13.33	11	0.05
										ASIATIC				
	Notifications		Deaths		Notifications		Deaths		Rate	Notifications		Deaths		Rate
	No.	Rate	No.	Rate	No.	Rate	No.	Rate		No.	Rate	No.	Rate	
	254	0.98	6	4.35	1	0.26	1	4.35	254	0.98	254	0.98	6	2.36
	296	1.13	13	12.50	1	0.09	1	12.50	296	1.13	296	1.13	13	4.39
	365	1.30	7	0.00	—	0.15	—	0.00	365	1.30	365	1.30	7	1.92
	378	1.34	16	20.00	3	0.16	3	20.00	378	1.34	378	1.34	16	4.23
	599	2.09	25	5.56	2	0.37	2	5.56	599	2.09	599	2.09	25	4.17
	444	1.53	16	0.00	—	0.37	—	0.00	444	1.53	444	1.53	16	3.60
	273	0.76	25	26.32	10	0.33	10	26.32	273	0.76	273	0.76	25	9.15
	336	0.92	22	15.22	7	0.39	7	15.22	336	0.92	336	0.92	22	6.55
	192	0.52	18	27.78	5	0.15	5	27.78	192	0.52	192	0.52	18	9.37
	221	0.59	20	15.38	6	0.32	6	15.38	221	0.59	221	0.59	20	9.05
	361	0.90	28	12.07	7	0.45	7	12.07	361	0.90	361	0.90	28	7.75
	269	0.63	39	28.40	11	0.32	11	28.40	269	0.63	269	0.63	39	14.50
	211	0.48	34	21.57	11	0.34	11	21.57	211	0.48	211	0.48	34	16.11
	190	0.41	37	22.45	11	0.32	11	22.45	190	0.41	190	0.41	37	19.47
	100	0.21	7	0.00	—	0.12	—	0.00	100	0.21	100	0.21	7	7.00
	280	0.56	34	21.74	15	0.42	15	21.74	280	0.56	280	0.56	34	12.14
	195	0.37	35	17.39	12	0.42	12	17.39	195	0.37	195	0.37	35	17.95
	111	0.20	18	9.68	3	0.16	3	9.68	111	0.20	111	0.20	18	16.21
	171	0.30	31	21.43	15	0.34	15	21.43	171	0.30	171	0.30	31	18.13
	115	0.19	10	20.83	5	0.11	5	20.83	115	0.19	115	0.19	10	8.69
	94	0.16	11	18.17	4	0.10	4	18.17	94	0.16	94	0.16	11	11.70
	103	0.17	14	10.71	3	0.12	3	10.71	103	0.17	103	0.17	14	13.59
	70	0.11	10	22.22	2	0.04	2	22.22	70	0.11	70	0.11	10	14.29
	38	0.06	5	25.00	3	0.05	3	25.00	38	0.06	38	0.06	5	13.16
	33	0.05	7	45.45	5	0.05	5	45.45	33	0.05	33	0.05	7	21.21

Poliomyelitis

The following table sets out notifications in racial groups for City cases since 1955.

Poliomyelitis Notifications since 1955

Race	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
European	65	82	113	13	23	9	3	-	1	-
Coloured	6	18	7	1	-	1	3	-	-	-
Bantu	7	32	27	7	21	29	21	4	20	7
Asiatic	4	26	16	6	7	8	2	-	5	1
Total	82	158	163	27	51	47	29	4	26	8

There were no deaths among the 8 notifications of this disease during the year. Of the 8 cases, one was an Asiatic child of 8 years who had received 2 oral doses of vaccine, while the remaining 7 were all Bantu children, 6 being under the age of 2 years, and one 6 years old. Four of the 7 Bantu had no previous immunisation history while one had received 3 doses, one 2 doses and the remaining one a single dose of vaccine. Those who had received vaccine contracted the disease in a mild form.

Virus studies are routinely performed on all clinical cases of poliomyelitis, but only in two cases was the virus isolated. These were from stool specimens and in each instance poliovirus Type III was found.

Efforts are being made to immunise as much of the population at risk as possible, and it is hoped that this will eventually lead to the virtual eradication of the disease.

Trachoma

The table below depicts the trend of notifications since 1940, and although there were only 14 cases this year, the last two years' figures indicate an increased awareness of the presence of the disease. Again, as in 1963, school surveys, by an ophthalmologist, led directly to these notifications during 1964. In most instances the clinical diagnosis was confirmed by isolation of the virus at the South African Institute for Medical Research.

All cases were treated as outpatients and close contacts were followed up and referred for examination to exclude the disease.

Year	European	Coloured	Bantu	Asiatic	Total
1940	-	1	2	-	3
1941	-	-	-	2	2
1942	-	-	1	-	1
1943	-	-	-	1	1
1944	-	-	-	-	-
1945	-	1	-	-	1
1946	-	-	-	-	-
1947	-	-	-	-	-
1948	-	-	-	-	-
1949	-	-	1	-	1
1950	-	-	-	-	-
1951	-	-	-	1	1
1952	-	-	-	-	-
1953	-	-	-	-	-
1954	-	-	-	-	-
1955	-	-	-	-	-
1956	-	-	1	-	1
1957	-	-	-	-	-
1958	-	-	-	-	-
1959	-	-	-	-	-
1960	-	-	-	-	-
1961	-	-	-	-	-
1962	-	-	3	2	5
1963	2	1	27	2	32
1964	-	6	1	8	15
Total	2	9	36	16	63

Encephalitis

There was an appreciable fall in the number of cases notified this year (14) compared with the previous year (31). The following table sets out the etiology of the encephalitis cases and also indicates the racial incidence.

Etiology	E	B	A	Total
"Virus Encephalitis"	5	3	2	10
Mumps Encephalitis	2	-	-	2
Chickenpox Encephalitis	1	-	-	1
Whooping Cough Encephalitis	-	-	1	1
Total	8	3	3	14

Three deaths were recorded, all being due to virus encephalitis. These were a European aged sixteen, an Asiatic child of six years and a Bantu child of one year.

No virus was isolated from any of the virus encephalitides.

Meningococcal Meningitis

Of the 11 notifications there were 3 deaths, a high percentage mortality. The following table sets out the notifications since 1955 and deaths (in parenthesis) since 1961.

Year	E	C	B	A	Total
1955	7	-	4	3	14
1956	5	3	22	3	33
1957	5	1	6	6	18
1958	6	2	11	4	23
1959	4	2	-	2	8
1960	2	2	2	-	6
1961	1 (-)	- (-)	4 (-)	1 (1)	6 (1)
1962	2 (-)	- (-)	3 (-)	- (-)	5 (-)
1963	2 (-)	- (-)	1 (1)	1 (-)	4 (1)
1964	5 (-)	1 (-)	3 (1)	2 (2)	11 (3)
Total	39	11	56	22	128

Scarlet Fever

City notifications totalled 59, an increase of one compared with the figure for the previous year. All cases notified were Europeans and no deaths were recorded. The highest incidence of the disease was in the winter months.

Eighteen cases were admitted to hospital and the remainder were permitted to remain at home as conditions were satisfactory for home nursing.

Leprosy

Eleven cases of leprosy, the same number as for 1963, were notified during the year. The one European case was of middle age and had been resident in Durban for the past 24 years. The ages of the patients varied from 19 to 64 years, the sex distribution being seven males and four females. Two of the Bantu cases were relapses, the one being a woman of 60 years with a strong family history of the disease. She had a son and grandson in the leper institution with a daughter recently discharged therefrom. In another instance, a brother of the case had died in a leper institution.

Non-notifiable Infectious Diseases

The only reliable statistics that can be used to give an indication of the morbidity of various common non-notifiable infectious diseases, are the figures obtained from admissions to local hospitals. Such admissions, however, are usually severe cases with complications. The following table sets out the admissions of such cases to local hospitals and also gives the number of deaths that occurred, the high mortality for measles amongst the Bantu being particularly noteworthy.

Disease	European	Coloured	Bantu	Asiatic	Total
<u>Measles</u>					
Cases	38	22	392	17	469
Deaths	-	-	53	-	53
<u>Mumps</u>					
Cases	15	1	21	-	37
Deaths	-	-	-	-	-
<u>Chickenpox</u>					
Cases	9	6	88	6	109
Deaths	-	-	2	-	2
<u>Whooping Cough</u>					
Cases	12	-	31	1	44
Deaths	-	-	1	-	1
<u>Rubella</u>					
Cases	5	-	-	-	5
Deaths	-	-	-	-	-

IV. OTHER COMMUNICABLE DISEASES.

1. RABIES

The continued prevalence of this disease in animals in Natal leaves little doubt that this province must be considered endemic for rabies, particularly Zululand. The entire Province remains a gazetted infected area.

Although there were no cases of rabies in animals or humans in Durban during the year, two Durban contacts were given prophylactic treatment in hospital.

An intensive rabies inoculation campaign took place in Durban from the 22nd September to the 16th October, 1964. All dogs over the age of 5 months were required to be inoculated and a total of 23,627 dogs were immunised in the Durban magisterial district alone. Frequent appeals have been made to the public to ensure that their dogs are kept fully protected against the disease.

2. MEDICAL EXAMINATION OF BANTU WORK-SEEKERS

Male Bantu work-seekers are medically examined at the Municipal Bantu Administration Department before registration is permitted. During 1964 a total of 99,483 examinations were performed, which is almost 8,000 more than 1963. Of the total examined 84,970 were adults and 14,513 juveniles.

Amongst these, many were referred to hospitals and clinics for further investigation, the main diseases suspected, being as follows:-

Venereal Diseases	:	1,551	persons
Tuberculosis	:	111	"
Bilharzia	:	15	"

In addition to the medical examination the Bantu are also routinely vaccinated, and during the year 81,566 vaccinations were performed. With the occurrence of 11 cases of smallpox in and around Durban and others in country districts, Bantu work-seekers coming from suspect areas were especially interrogated in regard to kraal particulars, in an endeavour to ascertain whether any Bantu who might have been contacts of smallpox cases, had arrived in Durban. None was discovered.

3. FOOD POISONING

Within the City of Durban, food poisoning is a notifiable illness when 2 or more persons are involved. Such notifications, however, are only required as a result of food eaten at hotels, boarding houses and like institutions and not from private dwellings. It may be that there are outbreaks, particularly during holiday seasons, which are not being reported to this Department as required, while on the other hand, the odd case involving a private dwelling is occasionally reported. In all known cases a full investigation is undertaken. Durban's climate offers ideal conditions for the growth of bacteria and any mishandling of food, especially in the summer months and during the holiday season in particular, when food-handling establishments are working to capacity, could lead to episodes of food poisoning. Fortunately, such episodes are uncommon. The organisms mainly responsible for outbreaks in Durban are staphylococci and salmonellae.

During 1964, 9 incidents of food poisoning were reported to this Department, 4 of which concerned private dwellings. A description of the various circumstances pertaining to each investigation is described in the Section on Health Inspection. It is proposed here to mention the epidemiological aspects of two major episodes where the cause was definitely established.

During October of 1964 approximately 40 students at a local hostel became ill some 4 hours after the evening meal, the main symptoms being "biliousness" and vomiting. The clinical picture suggested staphylococcal food poisoning. The only common food item consumed was carrots and beans over which a white sauce had been poured. This sauce, which was made from milk, butter, maizena and onions, was cultured and revealed the presence of haemolytic staphylococcus aureus (coagulase positive) while other food items cultured, resulted in no growth whatsoever. Examination of members of the non-European staff working in the kitchen showed some of them to have cuts and sores on their hands and arms and these no doubt formed the origin of the infection. Phage typing was not performed.

In December another large outbreak involved at least 31 persons attending a local studio's Children's Christmas Party. The clinical picture was one of fever, diarrhoea and vomiting occurring 12 - 42 hours after the consumption of food at the party, and suggested salmonella food poisoning. The common food items responsible were cakes, none of which contained fresh cream. "Artificial" cream, however, was present on some cakes. Salmonella sub group C was subsequently cultured from these cakes, as well as from the stools of 6 out of 13 specimens submitted from ill persons. Although an intensive investigation followed, including the submission for culture of the various ingredients used by the bakery concerned in manufacturing the cakes, it was not established how the cakes became infected with salmonella organisms.

V. TUBERCULOSIS

INTRODUCTION

The following figures depict the number of current cases of Pulmonary Tuberculosis in Durban at the end of 1964.

Race	City cases	Ex-City cases
European	846	92
Coloured	771	74
Bantu	7,784	1,936
Asiatic	2,850	154
Total	12,251	2,256

These tables do not include cases whose files have been closed. The "City" cases are cases which have been assessed as the financial responsibility of this Municipality while the "Ex-City" cases are those for whom Durban is not financially responsible. This latter group comprises cases living outside the Durban municipal area but coming to work in Durban as well as country cases (mainly Bantu) who have come to Durban because of their illness, and are found to be suffering from the disease. An illustration of the extent to which this occurs can be found in the case of the kwaMashu Bantu Township, where 36% of the new cases notified during 1964 from the kwaMashu Tuberculosis Clinic were "Ex-City" cases.

The closed files referred to above include, amongst other categories, cases who cannot presently be traced in Durban. This applies to the Bantu group in particular, who change addresses frequently without presenting themselves at the Tuberculosis Clinics. With the removal of the Cato Manor slums, the whereabouts of a number of tuberculosis cases remains unsolved. It is assumed that many of these persons have left the City.

STATISTICS OF CITY CASES

(a) Pulmonary Tuberculosis

(i) Notifications

The number of notifications of pulmonary tuberculosis received during the year 1964 is set out below together with the figures for the previous three years. The attack rate per 1000 population is also given.

Year	E	C	B	A	Total
1961	117	96	1,648	416	2,277
1962	129	85	1,524	332	2,070
1963	121	77	1,355	316	1,869
1964	121	110	1,256	479	1,966

Attack rates per 1000 population :-

Year	E	C	B	A	Total
1961	.70	3.74	8.82	1.86	3.78
1962	.76	3.21	8.03	1.44	3.35
1963	.70	2.82	7.04	1.33	2.97
1964	.69	3.91	6.43	1.96	3.06

The age groups of 1964 notified pulmonary tuberculosis cases are as follows :-

Ages	E	C	B	A	Total
0 - 4 years	6	37	185	100	328
5 - 14 "	1	14	118	93	226
15 - 24 "	5	11	156	91	263
25 - 44 "	37	36	544	133	750
45 - 64 "	51	9	230	51	341
65 and over	21	3	23	11	58

Source of notifications for 1964 :-

Of the 1,966 new pulmonary tuberculosis notifications :-

1,465 were notified from Tuberculosis Clinics
496 " " " Hospitals
5 " " " other sources.

Comment

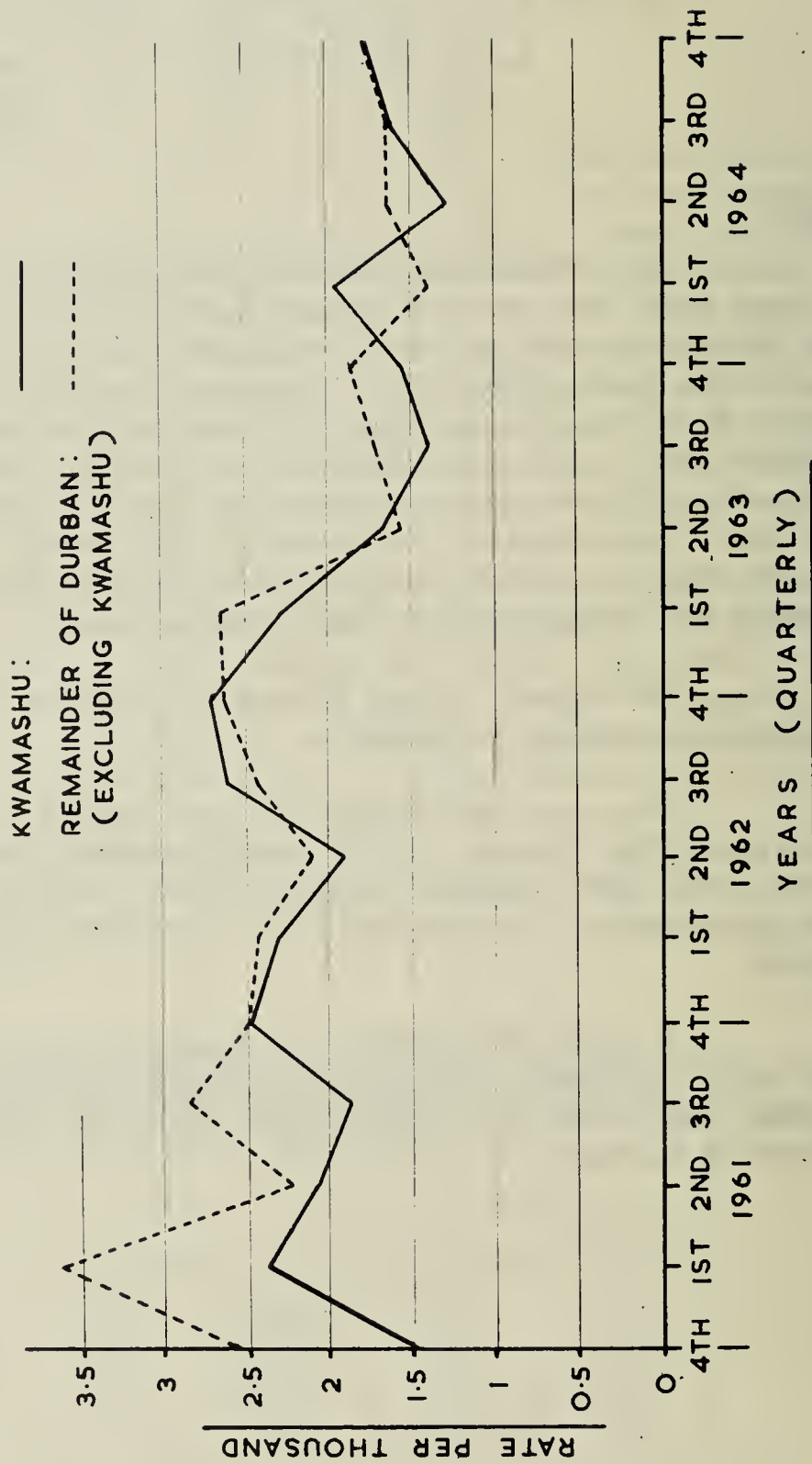
The total number of notifications is slightly higher than last year with the overall attack rate showing a very slight increase. While this is directly due to an increased Coloured and Indian attack rate, it has been offset by a decrease in the attack rate for Bantu. A factor that is at least partly responsible for the increase in notifications is the amendment to the Public Health Act during 1964 which made children under 5 years of age with positive tuberculin tests but without radiological evidence of pulmonary tuberculosis, notifiable. It may be that this has been applied more vigorously in the case of Coloureds and Indians than other race groups.

In regard to age groups, a similar pattern to that for the Republic as a whole, pertained.

More new notifications are coming from the Tuberculosis Clinics, and the figure of 496 notifications from hospitals, is much less than the 620 hospital notifications of last year. With the continued improvement in tuberculosis outpatient services, this is to be expected.

A graph depicting the quarter year pulmonary tuberculosis attack rate for Bantu living in the kwaMashu Township is presented hereunder and shows the attack rate to be no higher than for Bantu in the rest of Durban.

PULMONARY TUBERCULOSIS ; BANTU
 QUARTER YEAR ATTACK RATES (PER 1,000 POPULATION)
 IN KWAMASHU AND THE REMAINDER OF DURBAN:
 OCTOBER, 1960 TO DECEMBER, 1964.



(ii) Deaths

Deaths of City cases and the death rate per 1000 population are set out below together with the figures for the previous three years:-

Deaths	E	C	B	A	Total
1961	14	13	129	42	198
1962	14	15	133	37	199
1963	14	6	129	22	171
1964	9	8	108	23	148

Death Rate	E	C	B	A	Total
1961	.08	.51	.69	.19	.33
1962	.08	.57	.70	.16	.32
1963	.08	.22	.67	.09	.27
1964	.05	.28	.55	.09	.23

The overall death rate of .23 per 1000 population is slightly lower than last year. The highest death rate is among the Bantu and is twice as high as that for the Coloureds. A relevant factor is the severity of disease on first presentation, and this is undoubtedly worse in the Bantu than in any other group.

(b) Non-Pulmonary Tuberculosis

(i) Notifications

The total notifications of non-pulmonary tuberculosis are set out below :-

Year	E	C	B	A	Total
1961	1	4	102	44	151
1962	14	5	56	33	108
1963	2	-	50	30	82
1964	6	1	50	44	101

The 101 cases notified during 1964 have been analysed according to age groups :-

Ages	E	C	B	A	Total
0 - 4 years	-	-	1	1	2
5 - 14 "	1	-	1	5	7
15 - 24 "	-	-	17	14	31
25 - 44 "	4	-	23	18	45
45 - 64 "	1	1	8	4	14
65 and over	-	-	-	2	2

It will be noted that the notifications are highest in the 25 - 44 years age group, as is the case with pulmonary tuberculosis. Unlike the latter, however, there are very few notifications under the age of 15 years, but notifications of tuberculous meningitis are not included in the non-pulmonary category, as they are notified as suffering concomitantly from pulmonary tuberculosis and are included in that group.

(ii) Deaths

Deaths and death rates from non-pulmonary tuberculosis for the past four years are as follows :-

Deaths	E	C	B	A	Total
1961	1	2	32	14	49
1962	-	3	36	11	50
1963	1	-	19	10	30
1964	1	-	28	12	41

The corresponding rates were :-

Death Rate	E	C	B	A	Total
1961	.006	.078	.171	.062	.081
1962	-	.113	.190	.048	.081
1963	.006	-	.099	.042	.048
1964	.006	-	.143	.049	.054

HOSPITAL FACILITIES

The State Health Department, towards the end of 1963, reorganised the administration of hospital bed facilities and created four zones in Natal for this purpose, namely the Northern, Southern, Central and Zululand zones. Durban, Umlazi, Pinetown, Camperdown, Ndwedwe, Inanda, Lower Tugela and Mapumulo districts constitute the Central zone.

The tuberculosis bed capacity of hospitals which are situated in the Central zone are as follows :-

Hospital	Beds	E	C	B	A
1. King George V Hospital	1,619	97	76	1,370	76
2. Umlazi Mission	56	-	-	56	-
3. Illovo Sugar Estates	48	-	-	48	-
4. St. Mary's Mission, Mariannhill	63	-	-	63	-
5. Botha's Hill T.B. Settlement	117	-	-	117	-
6. Ekuphilisweni Mission Hospital	87	-	-	87	-
7. Montebello Mission Hospital	70	-	-	70	-
8. F.O.S.A. T.B. Settlement	156	-	-	-	156
9. Osindisweni Mission	151	-	-	151	-
10. Umpumulo Mission Hospital	45	-	-	45	-
11. McCord Mission Hospital	60	-	-	60	-
Totals:	2,472	97	76	2,067	232

As at the 31st December, 1964 these hospitals contained the following numbers of patients who were this City's financial responsibility:-

Hospital	E	C	B	A	Total
1. King George V Hospital	24	39	282	64	409
2. F.O.S.A.	-	6	6	57	69
3. Botha's Hill T.B. Settlement	-	1	41	-	42
4. Osindisweni	-	-	26	-	26
5. Umlazi Mission	-	-	19	1	20
6. St. Mary's Mission, Mariannhill	-	1	15	-	16
7. Montebello Mission Hospital	-	-	9	-	9
8. Illovo Sugar Estates	-	-	5	-	5
9. Ekuphilisweni	-	-	-	-	-
10. Umpumulo Mission	-	-	-	-	-
11. McCord Mission Hospital	-	-	18	4	22
Totals:	24	47	421	126	618

Durban cases were also hospitalised at other hospitals such as Richmond (35 Bantu patients) and Dannhauser (16 Bantu patients) when hospital beds were not available in the Central zone. The State Health Department have given valuable assistance in this regard. The perennial problem is that rural Bantu come to Durban for medical attention and when pulmonary tuberculosis is diagnosed and they are hospitalised here, they do not end up in hospitals in their rural home areas.

The S.A.N.T.A. Settlement for 250 adult Bantu males is under construction and will open during 1965. This centre is situated in the Umlazi Reserve, approximately 10 miles from Durban, and will afford welcome relief to the bed shortage problem.

During 1964, 1,617 City cases were admitted to various hospitals, comprising 115 Europeans, 81 Coloureds, 1,114 Bantu and 307 Asiatics. This total is slightly lower than last year's figure of 1,656 admissions.

Discharges of City cases numbered 1,419 and comprised 115 Europeans, 81 Coloureds, 954 Bantu and 269 Asiatics. In all 58 patients absconded from or left hospital against medical advice. These patients are a particular problem since by neglecting treatment they become chronic pulmonary tuberculosis sufferers, increasing the pool of infectivity. None the less every attempt is made to follow up these refractory patients to ensure that treatment is received by them.

King George V Hospital is the only tuberculosis hospital within the Durban borough, and as indicated above, caters for 58% of City cases requiring hospitalisation (409 out of a total of 701 patients in hospital). In view of this, it is appropriate to include some statistics relative to that hospital, kindly supplied by the Superintendent.

King George V Hospital	E	C	A	B	Total
Admissions 1964	323	145	277	2,886	3,621
Discharges 1964 (including deaths)	325	142	266	2,867	3,610

King George V Hospital	1964	1963	1962	1961	1960
Irregular discharges as a percentage of all discharges	11%	13%	12.5%	18.5%	17.0%
Pulmonary tuberculosis relapse rate (Ratio readmissions to total admissions)	17%	16.2%	16.75%	15.5%	15.1%

OUT-PATIENT SERVICES

There are six clinics at present in the City providing diagnostic and treatment facilities for pulmonary tuberculosis. The main clinic, the Durban Chest Clinic which is situated in the centre of Durban, serves all races and is controlled by the State Health Department.

The remaining five clinics are Municipal clinics administered by this Department and are situated in the various non-European districts to serve the different non-white groups.

(A) Durban Chest Clinic

The following information has been extracted from the Annual Report for this clinic, which the Medical Superintendent, Durban

Chest Clinic, has kindly made available :-

"(a) Diagnostic and Treatment Services

(i) X-Rays

	<u>E</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>Total</u>
Borough	15,722	2,769	16,802	22,987	58,280
Ex-Borough	1,631	163	2,603	17,691	22,088
	17,353	2,932	19,405	40,678	80,368

(ii) Notified Cases

	<u>E</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>Total</u>
Borough	97	79	231	592	999
Ex-Borough	15	1	3	86	105
	112	80	234	678	1,104

(iii) Tuberculin Tests

	<u>E</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>Total</u>
Borough	2,220	494	2,093	1,093	5,900
Ex-Borough	506	17	248	1,686	2,457
	2,726	511	2,341	2,779	8,357

(iv) Streptomycin Injections

	1,673	631	5,745	15,787	23,886
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(v) Other Injections

	432	32	442	1,504	2,410
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(vi) B.C.G. Inoculations

	1,265	133	642	572	2,612
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The following table shows how there has been a gradual reduction in the number of X-Rays taken over the past three years :-

1962	...	96,286
1963	...	93,866
1964	...	80,368

A similar reduction has also been noticeable in the number of clinical interviews. The major reasons for this are the peripheral tuberculosis clinic services being operated by the Municipality, as well as the State Health Department Tuberculosis Clinic, in the Umlazi Bantu Township. This Township, which is adjacent to the borough of Durban, while presently holding 54,000 Bantu, is being planned for at least 100,000 inhabitants.

There is a marked increase in the number of notifications, which undoubtedly is due largely to the fact that positive tuberculin reactors under the age of 5 years are now notifiable in terms of the Public Health Act as amended.

Certain pre-employment X-Rays were performed during the year and the table hereunder gives an idea of the percentage find of pulmonary tuberculosis cases.

	<u>Examined</u>	<u>Notified</u>	<u>Percentage Pulmonary Tuberculosics</u>
Coloureds	703	4	0.6%
Asiatics	4,216	16	0.4%
Bantu	6,872	40	0.6%

(b) Industrial Mass X-Rays

During 1964, 169 firms were visited and a total of 45,507 X-Rays taken. At 38 of these concerns treatment facilities are available, so that the patient can obtain his tuberculosis treatment at his place of employment.

Among premises visited for the first time during 1964 the following percentages reflect the incidence of pulmonary tuberculosis amongst the 2,151 workers screened :-

Active pulmonary tuberculosis	...	1.2%
Active + Inactive pulmonary tuberculosis	...	2.2%

As a comparison, a survey of 1,419 persons at a firm on regular annual screening, revealed the following incidence of new cases of pulmonary tuberculosis :-

Active pulmonary tuberculosis	...	0.2%
Active + Inactive pulmonary tuberculosis	...	0.4%

(c) Research

B.C.G. Vaccination in association with Tuberculin research has been performed at various institutions. A paper entitled "Limitations of the Accelerated B.C.G. Reaction as a Test for Previous Infection with the Tubercle Bacillus" has been prepared, and will be published after the Secretary for Health's permission has been obtained."

(B) Peripheral Municipal Tuberculosis Clinics

(a) Introduction

During 1964 this Department opened three further tuberculosis clinics, namely at Chatsworth, Merebank and Lamontville. There are now five Municipal Tuberculosis Clinics in the various non-white areas of Durban and the following time table reflects the facilities available at these clinics.

Clinic	Race	Hours	Days	X-Ray Facilities	Hours
kwaMashu	Bantu	9 a.m.- 3 p.m.	Monday to Friday	Monday and alter- nate Tuesdays and Fridays	9 a.m.- 1 p.m.
Cato Manor	Bantu and Asian	-do-	Monday and Thursday only	Thursday only	-do-
Merebank	Asian	-do-	Fridays only	Alternate Fridays only	-do-
Chatsworth	Asian	-do-	Tuesdays only	Alternate Tuesdays only	-do-
Lamontville	Bantu	-do-	Wednesdays only	Wednesday only	-do-

Two teams are employed in the operation of these clinics. Each team is headed by a Senior Clinical Medical Officer and while one team serves kwaMashu only, the other covers the remaining clinics. The only available X-Ray facility for all these clinics is in the form of one 100 m.m. mobile unit, and consequently it has been necessary to seek the Secretary for Health's approval for the purchase of a second mobile unit to provide adequate X-Ray coverage. A second clinic for Chatsworth is in the planning stage.

These facilities in the various non-white areas, provide a service within easy reach of the inhabitants' homes, and it is hoped that the patients will take full advantage of this. It is tragic that the numbers of treatment defaulters remains high, as this easily leads to chronicity of the disease, and the pool of chronic infectious pulmonary tuberculosis cases is already too large.

(b) Clinic Attendances

The following figures reflect the work performed at these clinics during 1964 :-

	Cato Manor	kwaMashu	Merebank	Chatsworth	Lamontville	Total
Total attendances	6,263	26,147	4,192	3,684	2,136	42,422
Contacts seen	596	1,211	228	422	532	2,989
Suspects seen	714	2,252	1,362	869	490	5,687
Tuberculin tests done	790	2,050	1,388	979	649	6,856
B.C.G. Vaccinations	546	2,932	1,414	868	289	6,049
Streptomycin Injections	1,009	6,660	-	11	64	7,744
X-Rays taken	1,524	4,398	495	722	750	7,889

All new attendances are first interviewed, and some are disposed of without being admitted for further investigation. These are persons who cannot be classed as tuberculosis suspects or contacts.

During 1964 the following numbers of persons were admitted to the clinics for the first time :-

Cato Manor	kwaMashu	Merebank	Chatsworth	Lamontville
1,392	5,002	1,675	1,373	1,058

Investigation of these admissions yielded the following numbers of cases of pulmonary tuberculosis :-

Cato Manor	kwaMashu	Merebank	Chatsworth	Lamontville
103	383	30	51	61

Many of the remainder who were found not to be suffering from pulmonary tuberculosis, but being contacts, were regularly followed up in case evidence of their having contracted the disease appeared at a later stage.

It is clear that there are more pulmonary tuberculosis patients treated at the Bantu clinics in proportion to the total number of persons admitted to these clinics, as compared to the Asiatic clinics. This is to be expected as the attack rate amongst the Indian population is much lower than that for the Bantu.

The yield of pulmonary tuberculosis cases from contacts and suspects is tabulated hereunder :-

	Cato Manor	kwaMashu	Merebank	Chatsworth	Lamontville	Average
Percentage of pulmonary tuberculotics discovered among contacts	5.7	5.5	0.9	1.6	3.2	4.2%
Percentage of pulmonary tuberculotics discovered among suspects	3.5	5.9	0.3	0.8	0.8	3.1%

It is obvious that on average more cases of pulmonary tuberculosis cases are discovered among contacts than among suspects, although the overall difference is not great.

(c) Tuberculin Testing

The Heaf test is routinely performed on all children up to 15 years of age and the table hereunder analyses these tests and the results.

Tuberculin Tests	Cato Manor	kwaMashu	Merebank	Chatsworth	Lamontville
Tests done	790	2,050	1,388	979	649
Tests read	736 (93.2%)	1,909 (93%)	1,356 (97.7%)	960 (98.0%)	594 (91.5%)
Positive	283	582	252	335	322
Negative	453	1,327	1,104	625	272

The percentage of tests read is extremely high, the lowest being 91.5% at Lamontville clinic. This has been achieved only after considerable work on the part of both the clinic staff who draw up the defaulters' lists with regular monotony and the Field Health Assistants who have to persuade the defaulters to attend the clinics.

(C) Umhlatuzana Clinic

This clinic has been run by the Local Health Commission for many years. When Umhlatuzana was incorporated into the Durban Borough in 1961, arrangements were made for this clinic to continue serving pulmonary tuberculosis patients living in this area.

During 1964 there were :-

Total Pulmonary Tuberculosis attendances	...	1,498
New " " cases	...	47

B.C.G. IMMUNISATION

The material and method used at all institutions is percutaneous freeze dried vaccine, administered with a 20 needle Heaf gun over the right deltoid.

In addition to the B.C.G. vaccinations mentioned above, this vaccine is also administered to newborns in hospitals as well as to certain sections of the school going community.

The total number of B.C.G. vaccinations administered during 1964 was made up as follows :-

Newborns at King Edward VIII Hospital	...	12,443
" " McCord Zulu Hospital	...	1,581
Municipal Tuberculosis Clinics	...	6,049
Durban Chest Clinic	...	2,612
School Children	...	2,141
Total:	...	<u>24,826</u>

FIELD WORK AND CONTROL PROGRAMMES

The field staff responsible for this control work comprises 5 European Health Visitors, 1 European Health Inspector, 15 Bantu and 6 Asiatic Health Assistants, together with a clerical staff of 4 Europeans and 1 Bantu.

This Section is particularly overloaded with work, and will require to be supplemented with extra staff in the near future. The investigation of cases, referral of contacts and tracing of defaulters alone, keeps the field staff more than fully occupied. "Chasing"

defaulters and dealing with the large numbers of chronic cases of pulmonary tuberculosis remains a difficult problem, and consumes a great deal of time.

Home visiting amounted to 48,803 visits during 1964 and comprised 5,281 visits to Europeans, 2,991 to Coloureds, 26,629 to Bantu and 13,902 to Asiatics. This represents an increase of over 6,000 compared with the previous year and is an indication of the heavy work load borne by these field workers. It is only the persistent persuasion on the part of the Bantu and Asiatic Health Assistants that secures over a 90% reading of tuberculin tests at the peripheral tuberculosis clinics.

SUPPLEMENTARY FEEDING OF INDIGENT TUBERCULOSIS CASES

During the year the scheme for feeding indigent outpatients was maintained at a cost of R8,077, of which seven-eighths was refundable by the State. Following upon the Health Department's transfer from the Gale Street offices to new headquarters in the mid-year, the distribution of rations to patients from central areas was continued from alternate accommodation adjacent to the Gale Street clinics, while distribution of rations from the Cato Manor, kwaMashu, Merebank, Chatsworth and Lamontville clinics to persons living in those areas continued as before. Rations, which were distributed to an average of 205 patients, totalled 8,283 issues, details of which are set out below :-

Age Group (years)	European		Coloured		Asiatic		Bantu		Total	
	Pa-tients	Ra-tions	Pa-tients	Ra-tions	Pa-tients	Ra-tions	Pa-tients	Ra-tions	Pa-tients	Ra-tions
0- 4	-	-	20	142	2	17	58	661	80	820
5- 8	-	-	5	48	8	94	33	399	46	541
9-12	-	-	2	26	14	162	22	267	38	455
13 and over	25	236	89	909	147	1,603	394	3,719	655	6,467
Totals	25	236	116	1,125	171	1,876	507	5,046	819	8,283

DOMICILIARY ASSISTANCE

This assistance which is initiated by the field control workers takes various forms such as food rations, disability grants and aid from the Natal Anti-Tuberculosis Association. The five European Health Visitors from this Department serve on the Care Committee of the Natal Anti-Tuberculosis Association and assist in decisions upon which the various grants are made.

An extract on care work from the Annual Report of the Natal Anti-Tuberculosis Association for 1964 is presented hereunder with the kind permission of that Association.

"The Care Committee meets each month to allocate the sums available for this purpose. There are continuously on our books between 450 and 500 patients with families who receive assistance in one way and another each month. For some considerable period the amount which has been available for care work has been limited to R1,200 a month, but thanks to the Tea Kiosk it has been possible to allocate another R80 per month for this work for part of the year. One of the objects of the recent National appeal for funds was to provide money for care work. There had been hopes that the Association would be able to share in this fund but to the disappointment of the Care Committee the National Committee has not been able to allocate any funds from this source to the Association.

Generally speaking the basis of our assistance is on the following lines :-

- (a) To families of all racial groups where the breadwinner is incapacitated through tuberculosis.
- (b) Financial aid and food for those receiving domiciliary treatment.
- (c) Help after treatment until work is found.
- (d) Milk, butter and eggs for children suffering from primary tuberculosis.

The amounts expended in recent years on care work are as under :-

	<u>Amount</u>	<u>Cases Assisted</u>
1961	R14,827	816
1962	15,000	930
1963	14,683	909
1964	15,635	932

A feature of the Care work of the Association is that assistance is invariably available at short notice, and the wait ordinarily associated with the obtaining of grants from Government sources is bridged. This is a matter of considerable moment where the breadwinner is suddenly put off from work and assistance for the family is essential."

Rehabilitation

When necessary tuberculosis patients who have difficulty in obtaining work are referred to the Natal Anti-Tuberculosis Association who help to place them in suitable employment. The following is an extract from the Association's 1964 Annual Report :-

"The break in the life of the wage earner who is required to spend six months in hospital in most instances involves a search for work when he is fit to resume work. There are no specialised workshops for Bantu suffering from tuberculosis who are permanently unable to return to ordinary labouring work, and it is not possible for the Association to make provision for workshops of this kind. On the other hand the Association has undertaken to find work for cured patients capable of doing work of a suitable nature. In this way since June, 1954 to the end of December, 1964 of 2,676 registrations no less than 1,975 have been placed in work. During 1964 of 126 registrations 96 have been placed."

VI. VENEREAL DISEASES

Introduction

The Venereal Diseases Clinics continued to function satisfactorily throughout the year and figures quoted in this report refer only to cases treated at these clinics. There is no record of cases treated at other institutions or by district surgeons and private practitioners, who are not required to submit any returns to the local authority.

New Cases

The total number of cases showed a decrease of 781 (3.9%) compared to the previous year. New cases of syphilis, however, increased by 7.3% whilst new cases of gonorrhoea decreased by 16%.

Total Attendances

The total attendance figure of 46,708 showed a decrease of 2.6% compared with the previous year (52,644).

Clinic Services

Addington: One clinic session is held each day at Addington Hospital for European and Coloured cases at the Special Clinic premises which are conveniently situated apart from other hospital buildings and with a private entrance. The clinic is administered and staffed by this Provincial Hospital, which is reimbursed by the Durban Corporation on a per capita basis, in respect of City cases. Attendances during the year were as follows :-

Race	New Cases	Total attendances
European	892	2,786
Coloured	532	1,990

Congella: This clinic is situated in the grounds of the King Edward VIII Provincial Hospital, utilising the hospital buildings, but administered and staffed by the City Health Department.

The clinic is open throughout normal working hours with a late session once per week and together with the kwaMashu Clinic, serves the Bantu and Asiatic communities.

Cato Manor: This clinic operated for one morning session per week and was managed by staff from the main venereal diseases clinic at Congella. With the gradual diminution in population of the Cato Manor Emergency Camp, clinic attendances steadily decreased in number and with the demolition of the last remaining shacks attendances fell to such a low level as to make the continuation of this service unnecessary. Accordingly the clinic was closed with effect from 30th September, 1964.

kwaMashu: One morning session of 3 hours per week is sufficient for the number of patients attending here. The staff for this "Special Clinic" is provided by the main Congella Clinic.

Attendances at these three clinics during 1964 were as follows:-

Clinic	New Cases		Total attendances	
	Male	Female	Male	Female
Congella	10,599	4,016	28,704	10,689
Cato Manor	20	112	42	291
kwaMashu	170	672	440	1,766

Ward Admissions

There are two wards at Clairwood Hospital for non-European patients suffering from venereal diseases, consisting of 20 beds for female patients and 19 beds for male patients. During the year 896 cases were admitted to hospital, which is a decrease of 125 compared to 1963. No European or Coloured cases required hospitalisation.

Contacts

The tracing of contacts continues to show improvement and 35% of known contacts attended the clinic for investigation and treatment.

Sideroom

In order to establish an early diagnosis, microscopic examinations of all discharges are carried out in the sideroom during each clinic session. When necessary, examinations by means of dark ground illumination are also made.

The following examinations were carried out in the sideroom at the Congella Clinic :-

Smears	...	14,134
Urine examinations	...	2,599

Laboratory

The following serological examinations for syphilis were carried out at the Government Laboratories, Currie Road :-

Kolmer	}	...	20,191
V.D.R.L.			

Ante-Natal Cases

A total of 863 ante-natal cases were referred to the Special Clinic for serological examination. Those cases in which tests proved positive, were treated.

Statistics

Venereal Diseases Among Non-Europeans - 1964

	New Cases		Total Attendances	
	Male	Female	Male	Female
1. Sero-negative Primary Sy.	623	55	1,676	113
2. Sero-positive Primary Sy.	57	22	1,163	95
3. Secondary Sy.	100	486	266	1,031
4. Tertiary Sy. (Recognised clinically)	2	2	3	3
5. Latent (Diagnosed on result of serological test done)	76	208	2,803	2,564
6. Neuro-syphilis	-	-	-	-
7. Congenital Sy. (Under 1 year)	29	34	66	98
8. Congenital Sy. (Over 1 year)	9	12	16	32
Total Syphilis	896	819	5,993	3,936
9. Gonorrhoea	4,933	1,091	10,607	2,530
10. G.C. Vulvo-vaginitis	-	11	-	16
11. G.C. Ophthalmia	15	10	23	18
Total G.C. infections	4,948	1,112	10,630	2,564
12. Ulcus Molle	1,278	96	2,515	164
13. Lymphogranuloma Venereum	390	13	1,225	28
14. Granuloma Inguinale	4	-	18	-
15. Venereal Warts	320	59	1,230	171
16. Non-specific Urethritis	2,499	2,608	6,922	6,477
17. Non-venereal	1,206	491	3,252	1,327
Total	5,697	3,267	15,162	8,171
Grand Total	11,541	5,198	31,785	14,671

Venereal Diseases : Summary of All Races Treated in 1964

	European				Coloured				Bantu				Asiatic				Total
	City		Ex-City		City		Ex-City		City		Ex-City		City		Ex-City		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
New Cases	433	59	398	2	385	114	33	-	8,284	3,086	1,779	1,505	677	186	49	23	17,013
Outpatient attendances	1,588	189	1,002	7	1,445	502	43	-	23,124	8,442	4,550	3,744	1,407	498	105	62	46,708
Ward admissions									143	412	63	259	9	9	1	-	896

VII. IMMUNISATION

The immunisation of susceptible members of the community against preventable infectious diseases is regarded as an important function of this Department and steady progress in this regard was made during the year. Immunisation was carried out at all Child Health Clinics, at primary schools of all race groups and in selected areas using the immunisation van as a mobile clinic with the assistance of the Health Education Section, in an attempt to achieve maximum coverage. Letters were sent to all European, Coloured and Asiatic mothers reminding them that their children were due to be immunised.

Smallpox Control

Vaccinations against smallpox were carried out at most child health clinics, and the immunisation van visited all congested non-European areas in the City at regular intervals. In May, June, July and August the regular immunisation programmes were interrupted following the discovery of cases of variola minor in the Durban North, Clairwood (suspect case), kwaMashu and Chesterville areas as described previously in this report. These four episodes necessitated intensive vaccination being carried out.

During the year 130,553 persons were vaccinated by this Department, comprising :-

Europeans	31,072
Coloureds	6,706
Bantu	63,690
Asiatics	29,085
Total	<u>130,553</u>

In addition 81,566 Bantu were vaccinated at the Municipal Bantu Administration Department.

Combined Diphtheria, Whooping Cough and Tetanus

Immunisation against Diphtheria, Whooping Cough and Tetanus was carried out at Child Health Clinics, Nursery Schools and a number of Creches. The total number of injections given was 3,386 (7.5%) more than the previous year but the coverage amongst the important under 1 year age group showed a substantial improvement of 8,505 (28%). A very high and gratifying percentage of first injections was achieved but as in previous years difficulty was experienced in making mothers realise the importance of subsequent immunisations.

Set out are details of injections given :-

Diphtheria, Whooping Cough and Tetanus (Combined):

	E	C	B	A	Total
1st Injection	2,584	1,628	7,918	8,740	20,870
2nd Injection	2,280	1,263	4,792	6,803	15,138
3rd Injection	2,284	1,104	3,292	5,408	12,088
Booster	152	14	4	14	184
Total	7,300	4,009	16,006	20,965	48,280

Diphtheria Tetanus

The Immunisation units visited all Government, Government-aided and private schools which cater for pupils under 10 years of age, and immunised all those children whose parents desired to have them protected. The following tables set out the details of the children

immunised at schools. The total represents an increase of 10% compared with the previous year.

Diphtheria Tetanus

	E	C	B	A	Total
1st Injection	1,767	896	4,512	10,985	18,160
2nd Injection	1,156	1,082	3,432	9,724	15,394
3rd Injection	148	621	3,203	6,757	10,729
Booster	4,176	603	179	1,837	6,795
Total	7,247	3,202	11,326	29,303	51,078

Typhoid Control

Clinics have been held twice a week when selected groups of food-handlers were Vi-tested and immunised against typhoid fever.

Those Vi-tested comprised 7 Europeans, 5 Coloureds, 788 Bantu and 42 Asiatics.

The following anti-typhoid injections were given :-

	E	C	B	A	Total
1st Injection	51	6	841	63	961
2nd Injection	22	7	519	32	580
Booster	29	-	454	16	499
Total	102	13	1,814	111	2,040

Poliomyelitis

Immunisation against Poliomyelitis has been carried out at all Child Health and Immunisation Clinics. Sessions were also held in various selected congested areas. The total number of doses of the oral poliomyelitis vaccine administered during the year decreased by 22,466 (26%) compared with the year 1963 but this was to be expected. Since the oral vaccine was introduced as a routine immunisation procedure in 1962 following the national campaign of the previous year, there existed a large residue of persons under the age of 30 years who had not been immunised. This number is now diminishing and Departmental activities are now concentrated on the under 1 year age group in which there was an increase of 11% in the number of doses administered during 1964. As with Diphtheria/Whooping Cough/Tetanus the number of first doses administered was most satisfactory but the second and third doses fell short of the requirement.

The following details reflect the number of persons who received the anti-poliomyelitis syrup.

	E	C	B	A	Total
1st dose	4,504	2,003	10,489	9,256	26,563
2nd dose	4,051	1,780	5,830	8,293	19,954
3rd dose	3,916	1,767	4,539	7,960	18,182
Total	12,471	5,550	20,859	25,820	64,699

SUMMARY OF IMMUNISATIONS

Diphtheria Injections

	Under 1 year				1 - 6 years				School Age					Adults				Total
	E	C	B	A	E	C	B	A	E	C	B	A	E	C	B	A		
1st	-	-	-	-	-	-	-	-	3	-	-	-	-	3	1	-	-	7
2nd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	3	-	-	-	-	3	1	-	-	7
Boosters	-	-	-	-	-	-	-	-	9	-	1	-	-	4	-	-	-	14

Combined Diphtheria, Whooping Cough and Tetanus

1st	2,402	1,473	5,885	7,261	182	155	2,033	1,476	-	-	-	3	-	-	-	-	20,870
2nd	2,098	1,171	3,317	5,466	182	92	1,475	1,337	-	-	-	-	-	-	-	-	15,138
3rd	2,082	968	2,139	4,123	202	136	1,153	1,285	-	-	-	-	-	-	-	-	12,088
Total	6,582	3,612	11,341	16,850	566	383	4,661	4,098	-	-	-	3	-	-	-	-	48,096
Boosters	-	-	-	-	152	14	4	14	-	-	-	-	-	-	-	-	184

Typhoid Injections General

1st	-	-	-	-	-	-	-	-	4	-	-	-	47	6	841	63	961
2nd	-	-	-	-	-	2	-	-	4	1	-	-	18	4	519	32	580
Total	-	-	-	-	-	2	-	-	8	1	-	-	65	10	1,360	95	1,541
Boosters	-	-	-	-	-	-	2	-	-	-	-	-	29	-	452	16	499

Diphtheria and Tetanus

1st	41	56	194	307	189	163	1,134	1,328	1,537	677	3,184	9,350	-	-	-	-	18,160
2nd	22	24	61	170	112	122	884	757	1,022	936	2,487	8,797	-	-	-	-	15,394
3rd	18	34	89	248	48	78	482	809	82	509	2,632	5,700	-	-	-	-	10,729
Total	81	114	344	725	349	363	2,500	2,894	2,641	2,122	8,303	23,847	-	-	-	-	44,283
Boosters	-	-	-	-	1,040	155	10	401	3,136	448	169	1,436	-	-	-	-	6,795

Food-handling : Vi-tests

European	Coloured	Bantu	Asiatic	Total
4	5	788	42	839

Tetanus

	Under 1 year					1 - 6 years					School Age					Adults					Total
	E	C	B	A		E	C	B	A		E	C	B	A		E	C	B	A		
1st	1	-	-	-	-	-	-	-	-	-	4	-	-	-	1	4	-	-	-	-	10
2nd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2
Total	1	-	-	-	-	-	-	-	-	-	4	-	-	-	1	6	-	-	-	-	12
Boosters	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3

Vaccinations

4,163	2,057	8,498	7,637	1,895	1,086	9,375	8,173	1,385	1,640	11,091	4,369	23,629	1,923	34,726	8,906	130,553
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Total Vaccinations

European	Coloured	Bantu	Asiatic	Total
31,072	6,706	63,690	29,085	130,553

Oral Poliomyelitis

	Under 1 year					1 - 6 years					School Age					Adults					Total
	E	C	B	A		E	C	B	A		E	C	B	A		E	C	B	A		
1st	3,283	1,310	5,334	7,033		720	432	3,751	2,128		78	229	470	256		423	32	934	150		26,563
2nd	2,842	986	2,896	5,081		757	437	2,309	2,625		98	306	205	378		354	51	420	209		19,954
3rd	2,368	759	1,874	3,715		1,002	469	2,198	3,396		153	476	201	525		393	63	266	324		18,182
Total	8,493	3,055	10,104	15,829		2,479	1,338	8,258	8,149		329	1,011	876	1,159		1,170	146	1,620	683		64,699

Total Oral Poliomyelitis

European	Coloured	Bantu	Asiatic	Total
12,471	5,550	20,858	25,820	64,699

VIII. MATERNAL AND CHILD HEALTH

MATERNAL HEALTH

Ante-Natal Clinics

The Department provides an ante-natal service for expectant mothers of all races who do not propose to have a medical practitioner in attendance at the time of the confinement. The attendances at the European and Coloured sessions were low as most mothers preferred to be admitted to hospital or have a district nurse in attendance at the time of the confinement. The Bantu sessions which were held at kwaMashu were discontinued, when the two Bantu nurses practising midwifery ceased to practise privately.

Set out below are details of City Health Department Clinics and attendances thereat.

	E	C	B	A	Total
Number of Ante-natal Clinics	12	12	5	93	122
Total attendances of expectant mothers	69	25	15	2,354	2,463
Number of Ante-natal Visits	77	8	649	332	1,066
Number of Post-natal Visits	-	8	2	850	860

The City Council does not provide any accommodation for maternity cases nor does it provide a district midwifery service, but the following Provincial Hospitals and Private Nursing Homes have services as set out hereunder :-

European: Addington Hospital (Provincial) and the Mothers' Hospital include a District Midwifery Service.

Maternity cases are accepted at St. Augustine's Hospital and Parklands Nursing Home.

Coloured: Addington and McCord Zulu Hospital include a District Midwifery Service. St. Aidan's Hospital accepts maternity cases.

Bantu: King Edward VIII and McCord's Zulu Hospitals include a District Midwifery Service. The Polyclinic, kwaMashu (Provincial) conducts a District Midwifery Service.

Supervision of Midwives

A Health Visitor supervises the work of the listed Midwives in private practice and investigates any case of stillbirth, puerperal sepsis or ophthalmia neonatorum which might occur in their practices.

The registered and uncertificated European and Coloured Midwives have their equipment and registers examined every three months whilst the uncertificated practising Asiatic Midwives' equipment is examined each month. Set out below are particulars regarding midwives (practising privately in Durban) on the list of this local authority, together with details of the number of confinements attended by midwives only, including the midwives in the employ of the Provincial Administration.

	E	C	B	A	Total
No. of registered Midwives on list	5	3	-	-	8
No. of unregistered Midwives	-	3	-	89	92
No. of Midwives who have ceased to practise (trained)	-	1	-	-	1
No. of untrained Midwives who have ceased to practise	-	-	-	1	1
No. of trained Midwives deceased	1	-	-	-	1
No. of untrained Midwives deceased	-	-	-	4	4
No. of women practising midwifery who have been warned not to do so unless they apply to have their names put on the list	-	-	-	11	11
No. of Midwives prosecuted	-	-	-	-	-
No. of difficult cases attended to and delivered	-	-	-	-	-
No. of Midwives put on list during the year	-	-	-	-	-
No. of Midwives reinstated during the year	-	-	-	-	-
No. of Midwives' appliances examined	15	10	-	703	728
No. of Midwives' bags replenished	-	20	-	868	888
No. of Midwives' dressings sterilised	-	34	-	1,503	1,537
No. of Midwives' dressings sterilised after septic cases	-	-	-	-	-
No. of visits to Midwives at their homes or at patients' homes	-	4	-	148	152
No. of Midwives who were warned for failing to comply with Regulations	-	-	-	7	7

No. of Confinements attended by Midwives

Attended by	Registered	Unregistered	Total
European	76	-	76
Coloured	235	19	254
Bantu	1,697	45	1,742
Asiatic	1,219	1,105	2,324
Total	3,227	1,169	4,396

The following is a brief report by the part-time Medical Specialist in charge of ante-natal clinics (Dr. L. Raftery, F.R.C.O.G., M.M.S.A., M.R.C.S., L.R.C.P.)

"The last year has been much the same as before in that our clinics are still serving a useful purpose in assisting the City's midwives with the problems that arise with their cases, and in seeing the numerous cases Indian, Coloured and European, who are going to have their babies at home under the care of midwives and "bag nurses". The numbers are lessening as the facilities at hospitals are extending but there is no possibility yet of discontinuing this service, as the hospital services cannot yet cope with the enormous numbers of mothers-to-be who wish for home deliveries. It is an onerous task that we undertake, as our "bag-nurses" and midwives are naturally not widely trained or experienced and therefore it behoves us to exercise all our skill and surveillance to see that only normal cases are left for home delivery and all complicated cases or possibly complicated cases are transferred to the care of doctors or hospital prior

to delivery. We have, I feel, gained the confidence of patients, midwives and doctors in increasing degree over the years in this connection.

The provision by the Council of apparatus enabling us to estimate the blood and anaemia level of our patients has been a great help and the ability to prescribe Iron pills to our anaemic patients has been of great assistance. Malnutrition is a serious problem among the Indian community, bringing in its wake a serious anaemia and this we have been able to overcome in many cases with the Iron tablets at our disposal.

I must again record my pride and pleasure in the efficiency and devotion to duty shown by the personnel of the City Health Department without which this type of difficult work would easily become a farce and a failure."

CHILD HEALTH

Two additional child health clinics were put in operation during the year; one in the City Health Department's new premises for the European mothers and babies living in the area and another at Wentworth for the Coloured families.

Several inspections have been made to find suitable sites for additional clinics in some of the built-up areas where no services are available, and mothers have to travel long distances to come to a clinic.

Mother and baby clinic sessions were held at 34 different centres in the City. Where there are no Municipal clinics, halls are hired for the purpose. At some centres, daily sessions were held, whilst weekly and in some instances fortnightly sessions were sufficient in the less congested areas.

The attendances at all clinics have increased considerably during the past five years as will be seen from the following table.

Attendances of Nursing Mothers, Infants and Toddlers
at Clinics during the past 5 years

Race	1960	1961	1962	1963	1964
European	56,376	48,344	56,946	55,953	56,632
Coloured	15,608	17,288	34,776	49,344	52,682
Bantu	141,298	146,498	227,106	233,975	237,256
Asiatic	63,951	83,769	174,826	222,911	235,031
Total	283,233	295,855	493,654	562,183	581,601

Demonstrations and Health Talks

The importance of giving suitable short "Health Talks" to the mothers attending clinic has been stressed this year. The non-European trained staff have been given subject matter to study, and when ready have first given the talk to their colleagues and then to the mothers.

The following schedule sets out details of attendances at the Child Health Clinics.

	Euro- pean	Col- oured	Bantu	Asia- tic	Jan.to Dec.1964	Jan.to Dec.1963
Total number of Sessions	964	386	1,490	1,116	3,956	3,780
Total Sessions for Children	952	374	1,485	1,023	3,834	3,627
Total Ante-natal Sessions	12	12	5	93	122	153
Total Attendances at Clinics	56,632	52,682	237,256	235,031	581,601	562,183
New Cases out of above number	3,897	2,645	18,388	17,943	42,873	42,478
Total Attendance of Infants	27,740	16,145	73,529	73,493	190,907	190,559
Total Attendance of Toddlers and Pre-school Children	18,448	24,270	97,877	96,422	237,017	217,931
Total attendance of Nursing Mothers	10,375	12,242	65,835	62,762	151,214	150,874
Total Attendance of Expectant Mothers	69	25	15	2,354	2,463	2,819
Number of Test Feeds given	35	-	1	1	37	41
Number of Mothers instructed in minor ailments treatment	2,008	3,465	31,425	26,533	63,431	61,722
Number of Health Talks and Demonstrations given	2,630	1,535	9,593	9,810	23,568	22,473
Number of cases seen by doctor	3,912	2,302	3,206	4,310	13,730	11,700

Home Visiting

This year it has been possible to increase the time allocated to the important facet of child health work, namely home visiting.

All mothers who had not had a private practitioner in attendance for their confinements were visited soon after discharge from hospital or when the midwife had terminated her attendance in the home.

Among other visits were those who needed a mid-week check between clinic attendances.

Visits were also made at the request of the Durban Child Welfare Society to babies and pre-school children where neglect by the parents was suspected. All infants pending adoption were visited regularly until the final adoption papers were completed.

The following home visits were conducted during the year:-

	European	Coloured	Bantu	Asiatic	Total
First Visit	2,427	2,031	9,399	11,544	25,401
Re-visit	6,561	774	2,052	765	10,152

State Subsidised Milk Scheme

This scheme has continued to provide excellent results in combating kwashiorkor, and reducing the infant mortality rate in the City. The milk was issued at all child health clinics to children attending clinic who were undernourished or showing early signs of kwashiorkor. Demonstrations on the correct use of the milk were given at the clinics.

A total of 147,830 lbs of State subsidised dried skim milk was issued over the year, of which 6% was distributed free.

During the year 11 Coloured, 14 Asiatic and 750 Bantu cases of kwashiorkor were notified. This is slightly more than occurred in the previous year in respect of the Bantu; however, this increase is not regarded as significant and the number of notifications cannot be accepted as an accurate index of the incidence of kwashiorkor in the City. Apart from the fact that a large percentage of these cases were temporary visitors there were also difficulties of diagnoses and wide divergencies of opinion and interpretation of diagnostic criteria.

A policy of making a full investigation into every reported case of kwashiorkor was introduced during the year but this was implemented only gradually because of staff difficulties. By the end of the year, however, this system was functioning fully and a total of 204 cases had been investigated. This not only had the effect of providing useful information in regard to these cases but also served a very good purpose in discovering further cases of malnutrition in the same families and encouraging the health education of mothers of young children in instances where it was most needed.

Of the cases investigated approximately 50% either could not be traced or were visitors to the City who had given accommodation addresses. Almost all of the cases who lived in the City had either not attended child health clinics at any time or had attended irregularly and then not returned.

There was little evidence of malnutrition or kwashiorkor amongst children who attended the clinics regularly, whereas the nutritional state of the "visitors" was almost universally poor. Since clinic attendances have been progressively increasing, particularly with the intensification of home visiting programmes, it is considered that the milk feeding scheme together with the child health education activities are contributing materially towards improvement in the nutritional state of non-European children in the City.

The number of deaths recorded, both from Kwashiorkor and Malnutrition, in the under 5 years age group, since 1958, is recorded below :-

Deaths from Kwashiorkor and Malnutrition
(Under 5 years of age)

Year	European	Coloured	Bantu	Asiatic	Total
1958	1	-	305	30	336
1959	-	1	145	6	152
1960	-	1	121	2	124
1961	-	2	109	17	128
1962	-	2	102	8	112
1963	-	2	83	4	89
1964	-	1	78	7	86

Senior Clinical Medical Officer's Report

The Senior Medical Officer, Dr. H.A.B. Pletts, comments as follows :-

"This has been a year of change, brought about in the main by our move into the new building in Old Fort Place, undertaken at a time when the Child Health and Immunisation staffs were burdened as a consequence of the outbreak of smallpox in June and July. These cases and the Government poster to which the several similar outbreaks in other areas gave rise, brought a large number of unvaccinated persons, and an even larger number

of "lapsed" vaccinations seeking re-vaccination. This poster was displayed in all Post Offices and other Government Buildings, and warned of the necessity to produce evidence of vaccination - stressing the legal position of the individual citizen. Schools, already well aware of their responsibilities to the children in this regard, for the most part combed through their classes, and found several children with unsatisfactory evidence of protection. All these, plus the many telephonic enquiries of the legal position, and clinical advice where there was some factor in doubt, kept the staff very busy indeed. It was also found necessary to continue an Immunisation department in the vacated Gale Street premises, for several months after the move.

To the many hundreds of people who came to the new building, this vaccination drive served as an initiation visit, and the adequate space, and planned layout of the new premises were very much appreciated - alike by the staff and the members of the general public.

It was decided to hold a mother and baby clinic in our new premises on a Thursday morning and the numbers attending this have progressed well. Many more would be able to attend if the transport to and from town were easier and less time-consuming.

The year started with compulsory immunisation against poliomyelitis and the attendant work of providing each child with a Form as evidence of compliance with this to be produced at the time of entry into school.

In most of our clinics the numbers have been on a gradual increase - testimony to the steady growth of our City, and the growing clinic-consciousness of the population, particularly on the non-White side. The nursing and clerical staff are due once again for the "thank you" that their co-operation and high standard deserves."

Nursery Schools, Creches, Play Centres

Inquiries were received from five persons who were anxious to open day creches. Three applicants could not find suitable premises and decided not to pursue their plans at the time. The remaining two Play Centres were registered with the Department of Social Welfare in November, 1964.

Mothercraft Bursary

In 1961 the City Council instituted a Bursary to be awarded annually to a nurse trained at Addington Hospital to assist her to undertake the Mothercraft training.

In 1963/64 the Bursary was awarded to Miss I. Erasmus.

Medal Awards to Student Nurses

The following nurses were selected to receive the City Council's awards for the most outstanding nurses in training at the various training hospitals in the City.

Addington Hospital

Gold Medal
Silver Medal

Nurse Lange-Smith, Noreen May.
Nurse Robbins, Esther May.

St. Augustine's Hospital

Stainless Steel Fob Watch

Nurse Hills, Margot Ann.

Entabeni Hospital

Rolled Gold Fob Watch
Stainless Steel Fob Watch

Nurse Vorster, Catherine Maria.
Nurse Bakke, Anna Maria.

St. Aidan's Hospital

Stainless Steel Fob Watch

Nurse Tandekile Mzobe
Catherine Henretta.

King Edward VIII Hospital

Rolled Gold Fob Watch
Stainless Steel Fob Watch

Nurse Yoko Esther Buyelwa.
Nurse Nkukwana Beatrice Nokwazi.

McCord Zulu Hospital

Stainless Steel Fob Watch

Nurse Tacoba Mokoditsoa.

EXFOLIATIVE CYTOLOGY

As mentioned in the previous year's report the City Council approved of the establishment of a scheme to make available facilities for the diagnosis of cervical cancer in its early stages, for a trial period of two years and this scheme commenced in January 1963. During the year 1964 the service functioned well and there was an increase in the number of smears examined. On 29th September, 1964, the City Council authorised the continuation of this service on a permanent basis and also resolved that further representations should be made to the Central Government for contributions towards the costs involved. This has been done.

The table below sets out details of the smears tested and the number of cases of malignant disease discovered :-

Age Group	European	Coloured	Bantu	Asiatic	Total	Cancer Cases
Under 30	450 (32)	4 (1)	1 -	41 (2)	496 (35)	2
30 - 40	853 (84)	9 -	2 -	53 (5)	917 (89)	3
40 - 50	782 (111)	2 -	2 -	23 -	809 (111)	3
50 - 60	349 (48)	1 (1)	- -	6 -	356 (49)	5
Over 60	133 (21)	- -	- -	1 -	134 (21)	5
Not stated	155 (18)	- -	8 -	40 (1)	203 (19)	-
Total	2,722 (314)	16 (2)	13 -	164 (8)	2,915 (324)	18

(Repeat smears shown in brackets)

The 18 cases of malignant disease discovered were all confirmed by histological examination of biopsy specimens. Two of them were Indian women and the remainder European. The great majority were cases of cancer in a very early stage with an excellent prognosis. Although most of the smears were taken as a routine investigation to exclude cancer, this did not apply in all cases.

The figures quoted above refer only to the service conducted by this Department. Facilities were also available in Durban at two Provincial Hospitals and from private pathologists.

IX. HEALTH EDUCATION

The main function of the Child Health Section is to assist and encourage health education of mothers of young children in order to prevent disease and attain a condition of positive health amongst their children. In other fields, Health Inspectors, through their daily contact with the public, and Medical Officers of Health, through the medium of press, radio and talks to voluntary associations and other bodies, all play their part.

The Department's Health Education Section, however, is charged with the full-time task of providing public instruction for all race groups in the principles of disease prevention and health promotion. Teaching embraces children as well as adults and attention is drawn particularly to the facilities offered by the City Health Department as a whole. The following is a brief report of the activities of this Section, during the year, prepared by the Health Educator, and presented in her own words.

EUROPEANS

It has been surprising to note how the possession of a hall in the Health Education Centre of the new building is opening up a considerable vista of extension and expansion of health education programmes amongst Europeans.

In the past for instance, to take a health education programme to a Women's Institute or Church Group meant attending their monthly meeting at which a film had to be sandwiched between items on the agenda. An atmosphere of haste and inadequate blacking-out facilities were neither conducive to atmosphere nor to concentration and much of the benefit of the instruction of that moment in time was lost in the welter of getting back to their own problems and discussion.

Although the furnishing and equipment of the hall were not complete until near the year's end, and therefore only a few sessions were held, they were enough to sharpen the vision to the increased opportunities for the future. An incident will suffice to show how one expansion leads to another. Following a demonstration with a model to illustrate how health subjects are presented to the Bantu of all levels of education, a group of women interested in the domestic servants of their areas eagerly offered the use of the hall they used once a month and, what is more, guaranteed a good attendance. A major problem of a city is the gathering of domestic servants together. The loudspeaker van with visual aids can only work through districts where they are employed between the hours of 2 p.m. to 3 or 3.30, their "lunch-hour" break: much of this time is taken up by inviting them to gather in groups and time must be left for their many questions. The possibility of women's groups using their influence to obtain the use of halls is an encouraging prospect.

Already Women's Institutes, Church Groups of all denominations, scouts, guides and various societies are being booked for the coming year's sessions at the Centre.

During the last two months of the year programmes presented in the hall included Food Poisoning, Bilharzia, "This is Your Lung" (Cancer in relation to smoking), and Tuberculosis. Attendances numbered 700.

BANTU COMMUNITY

Over twenty years ago when health education was first pioneered in Durban beginning with the Bantu race, the generally accepted implications and applied principles of health education were usually understood to mean the prevention of diseases and the promotion of health. This conception has had to make way for a canvas in which the

picture is of far wider and deeper dimensions.

In almost any departmental situation there is a place for the exercising of health education techniques, many of which have arrived at their present forms through experience. Whether in the exploratory or experimental situation, in the dilemma of personal relationships, in mental health, social behaviour or in assessments of circumstances requiring deep insight into the fundamentals of racial thinking, health education is able to make its specific and practical contribution.

Bantu Schools

	<u>Sessions</u>	<u>Attendances</u>
Tuberculosis. Demonstrations with model	95	7,803
Bilharzia slides with live commentation	62	5,813
Diphtheria. Demonstrations with model (Seniors)	75	9,785
	<u>232</u>	<u>23,401</u>

It is not without justification that lecturers go to their yearly appointments at schools with something akin to delight. There, more than at any other time, they have the rare opportunity with audiences, of following up the teaching of the year before and assessing accuracy, assimilation and retention of the subject. All health education work is followed up from time to time, but with open-air township groups and even in factory compounds and courtyards where the environmental factors of noise and distractions are so operative, the follow-up procedure is more difficult. Principals and teaching staff frequently confess to having learned something new about a subject, and sometimes to their surprise, also about their pupils. During sessions on Tuberculosis this year teaching staff were dismayed to discover how many children in their classes were defaulters from clinic and with no continuity of treatment. Invariably the reasons proffered were that they were FEELING much better.

S.A.B.C. Bantu radio

The undermentioned subjects were scripted and broadcast over F.M. newsreel by the section's Bantu lecturers, chiefly in dialogue form; they were also recast on medium wave :-

Poliomyelitis	2 casts
Food Poisoning	2 "
Bilharzia	1 "
Burning Braziers	1 "
B.C.G. Vaccination	1 "
Diphtheria/Whooping Cough/ Tetanus	1 "
Rabies	1 "
Flies and the Spread of Disease	1 "
Tilapia species of fish as food	1 "
Smallpox	2 "
Total:	<u>13 "</u>

Judging from unsolicited listeners' comments, the two themes which produced the most impact were Food Poisoning and B.C.G. vaccination. Lecturers were confronted on the field with further questions on these subjects.

Field Work

Tuberculosis and Nutrition were the major subjects on the weekly and monthly programmes, the details of which appear below.

Tuberculosis

Group talks by footmen with portable visual aids	3,640
Loudspeaker van talks with portable visual aids	168
Model demonstrations at Durban Chest Clinic	375
Flannelgraph demonstrations	<u>3</u>
Total:	<u>4,186</u>

Nutrition

Municipal Housing Schemes:	Footmen with loudhailers and loudspeaker van	333
Municipal Beer Halls:	Talks to groups	577
Municipal Men's Hostels:	Group talks	271
Shack Areas:	Footmen lecturing to groups	56
Bantu Administration Department:	Talks to groups waiting for registration	667
Industry:	Model demonstrations	18
Miscellaneous:		<u>77</u>
Total:		<u>1,999</u>

Domestic Servants

This scattered section of the Bantu community are difficult of access by reason of their employment. It is only between the hours of 2 - 3 or 3.30 p.m. when most of them have "time off" that the loudspeaker van and accompanying footmen can shepherd them into groups for visual aid instruction. The theme chosen this year for servants was Venereal Diseases and Social Behaviour - themes which never fail to hold an audience and at that a very alert audience full of questions. Campaigning against smallpox interrupted the planned programme so that in all group talks numbered only 168. Every encouragement was given by housewives to lecturers to address their servants, many even sending messengers to neighbouring "kayas" bidding them attend the "wayside health school".

The total numbers of Venereal Diseases talks presented with visual aid through the City were :-

Municipal Housing Schemes	254
Municipal Hostels	75
Municipal Beer Halls	97
Shacks	78
Bantu Administration Department	1,117
Domestic Servants	167
Miscellaneous Groups	<u>66</u>
Total:	<u>1,854</u>

Smallpox

On four occasions during the year all planned programmes were cancelled because of the necessity of smallpox vaccination campaigning due to the presence in the City of cases of the disease. A full account of these outbreaks is given elsewhere in this report. The total smallpox loudhailer group and loudspeaker van talks given throughout the City by this section of the Department numbered 3,083.

Anti-Rabies Campaign

In connection with the above campaign inaugurated by the Division of Veterinary Services, the normal non-European programmes were held in abeyance in favour of education on the prevention of rabies and the nature of the disease, as well as announcements relative to times and venues of inoculation stations. The campaign was

of a month's duration and the entire non-European staff, Bantu, Asiatic and Coloured, not only preceded the veterinary personnel but helped to persuade owners with their dogs to attend on the days of actual inoculation. In all, 1,222 talks either by loudhailer from footmen, or from the loudspeaker van were given to the Asiatic community, 733 to the Bantu and 131 to the Coloured section of the population.

The year's packed programme precluded little but a passing nod where circumstances demanded to bilharzia, diphtheria and food-handler hygiene.

ASIATIC COMMUNITY

Faced with the formidable task of ensuring that the ever increasing population in the expanding new township of Chatsworth was safeguarded by immunisation, footmen combed through flats and houses, family by family to assess the situation and hasten all the "unprotected" to the appropriate clinics. Another Indian township similarly combed was Merebank. It is not surprising therefore that the three top subjects of the year's accomplishment were statistically led by the subject comprehensively entitled "Maternal and Child Welfare" which implies a full immunisation against diphtheria/tetanus/whooping cough, poliomyelitis and smallpox, as well as specific teaching on various facets which promote the health and wellbeing of family life.

The total number of talks on these subjects throughout the City, including shack areas, were :-

Maternal and Child Welfare:	Group Talks		9,545
Smallpox Vaccination:	Group Talks	3,119	
	Loudspeaker van talks	<u>967</u>	4,086
Poliomyelitis Vaccination:	Group Talks	1,439	
	Loudspeaker van talks	<u>725</u>	2,164

The smallpox and poliomyelitis figures above, additional to those included in Maternal and Child Welfare were related, in the case of smallpox, to the presence in the City of cases of smallpox, referred to elsewhere. Additional teaching on poliomyelitis immunisation were special exhortative campaigns in areas where mothers had been dilatory over this matter.

Schools

One hundred and nine sessions to 3,762 school children embraced teaching on bilharzia, the spread of disease by insects, dental caries and pulmonary tuberculosis. No group of people are more eager for the instructional visual aid visits of the section than Indian principals of schools.

Twelve sessions, similar to the above were presented to 323 children and adults who were inmates of various social welfare organisations.

Factories

Thirty-three group talks on venereal diseases delivered mostly during the lunch hours, were given to male and female factory workers in rooms provided by managements.

As the occasion demanded, other subjects taken to various areas were :-

Nutrition	407 talks
Rabies	1,361 talks
Diphtheria	859 talks with visual aids
Tuberculosis	542 talks with visual aids
Bilharzia	95 talks with visual aids

COLOURED COMMUNITY

Factories

One of the most effective fields in which the Coloured health lecturer worked was factories. Last year the subject presented to factory workers was Venereal Diseases. This year the theme throughout was Tuberculosis.

Attendances (both sexes) : 5,556
Number of talks : 54 at 30 factories.

The managements wherever possible signified their approval of health instruction by granting an extended lunch break.

Schools

This year's subject for schools was Nutrition in which a model was used for demonstration purposes. As in the case of the Bantu and Asiatic, so too it was the delight of the Coloured worker to visit schools wherein he particularly enjoyed assessing the effectiveness and retention on the part of students of the previous year's instruction.

Total number of schools visited : 9
Total number of sessions (demonstrations) : 27
Total attendances : 1,553

Routine Work

Although health education is never routine in the sense of being monotonous it comprised work chiefly in townships, shacks and scattered areas where Coloureds have grouped together in small numbers. These scattered and small groups have all to be reached and taught, which, because of the transport factor, makes this section of the programme more time consuming than any other.

Polionyelitis talks from loudspeaker van
and to groups : 559
Smallpox talks from loudspeaker van and
to groups : 500
Tuberculosis talks with portable visual
aids : 411
Diphtheria talks with portable visual aids : 334
Maternal and Child Welfare talks : 133
Rabies talks : 135

Venereal Diseases was accented throughout last year and is absent from the above.

VISITORS

Ten senior State Health officials spent a morning in the demonstration hut where a programme had been arranged for them which pointed to specific trends and techniques used by the section. Discussions related to hazards and obstacles in the field, surveys, training of staff, essential personality qualifications required to be a successful health educator, assimilation of teaching by the public, results and their assessment. Bantu staff gave live film commentations and demonstrated how subjects are presented to the Bantu by various visual aids departmentally produced. Bantu lecturers were questioned on many interesting points. The subjects presented were: Diphtheria, Tuberculosis, Kwashiorkor, Nutrition and Flies.

X. HEALTH INSPECTION

STAFF

Notwithstanding a consistent annual increase in the population of Durban the staff establishment has, for some years, remained static. The time is approaching when the position regarding the complement of personnel and amendment to divisions, districts and duties will need to be reviewed.

At the close of the year the staff of this section comprised the Chief Health Inspector, Deputy Chief Health Inspector, 10 Senior Health Inspectors and 39 Health Inspectors.

Of this total some 5 Senior Health Inspectors and 6 Health Inspectors are seconded to "specialist" sections made up as follows:-

Dairies	:	1 Senior Health Inspector and 3 Health Inspectors. (A separate report on dairy activities is included).
Tuberculosis	:	1 Health Inspector
Infectious Diseases	:	1 Senior Health Inspector
Housing and Plans	:	1 Senior Health Inspector and 1 Health Inspector
Field Hygiene	:	1 Senior Health Inspector
kwaMashu Bantu Township and Chatsworth Indian Township) :	1 Senior Health Inspector and 2 Health Inspectors

Insofar as routine inspections are concerned the City is grouped into five divisions, each in charge of a Senior Health Inspector. These divisions are subdivided into health districts served by the remaining 32 Health Inspectors. All routine inspections, investigation of complaints and nuisances, reporting on licence applications, court procedures, etc. are undertaken by Health Inspectors under the supervision of the Senior Health Inspectors concerned. Sampling of food is carried out by the Senior Health Inspectors, each one in turn sampling his own division every 5 months, and at the same time being responsible for the taking of water samples over the whole of the City.

Apart from the foregoing a number of Health Assistants and General Assistants are employed in each division. Health Assistants (trainee Health Inspectors) serve a useful purpose in the preliminary investigation of complaints of flies, dirty yards, bug infestation of servants' accommodation, poultry keeping and like matters. General Assistants devote their time to rodent control measures and to supervising labour gangs operated by the Field Hygiene Section.

INSPECTIONS

In all some 153,489 inspections of a routine nature were carried out. This figure does not include inspections in connection with infectious diseases, dairy farms, country milk depots, housing and plans. These inspections are classified below :-

Bakeries	300) Food-handling trades
Boarding Houses, Private		
Hotels	1,545	
Butcheries	3,626	

Dairies, Milk Depots (in the City)	3,040	}	Food-handling trades
Food Manufactories	1,160		
General Dealers and Fresh Produce	17,495		
Hotels (Liquor Licences)	1,522		
Milk Bars	61		
Offensive Trades	276		
Restaurants, Eating Houses	6,247		
Tea Rooms	1,917	}	
Sundry	1,836		

General Dealers	5,665	}	Non-food trades
Hairdressers	925		
Laundries, Dry Cleaning Depots, etc.	829		
Lodging Houses	12,059		
Offensive Trades	1,985		
Sundry	11,763	}	

Barracks, Compounds, etc.	913	}	Non-trading premises
Dwellings	51,872		
Sundry	28,403		

Arising from the above inspections the following action was taken :-

Personal notices issued	8,623
Written notices served	3,286
Letters written	1,907

Licence Applications

A total of 2,800 applications for trading licences were received for departmental attention and the relevant reports were transmitted to the City Licensing Officer. A further 432 reports waiving or sustaining departmental objections were also submitted.

In addition 56 reports for permits to house Bantu were addressed to the Director, Bantu Administration.

Animal Keepers

In terms of the Public Health By-laws certain animals may not be kept within the City except under the authority of a permit issued by the City Medical Officer of Health. During the year 33 such permits were issued, covering the keeping of the following animals :-

Horses	964
Bovines	158
Goats	6
Dogs (where kept for gain)	255

Four applications were refused, involving :-

Horses	12
Bovines	18
Pigs	180

Registration of Mattress Makers and Upholsterers

The Regulations regarding mattress makers and upholsterers require that such firms or persons be registered by the Department. During 1964, 27 certificates of registration were issued, no applications being refused.

FOODSTUFFS AND FOOD--HANDLING

(a) City Markets

On each trading day at the markets all incoming perishable foodstuffs were subjected to examination and all unsound foodstuffs found were condemned and destroyed. The following items were involved:-

<u>Commodity</u>	<u>Quantity</u>
Bananas	5 crates
Broad beans	4 sugar bags
Cabbages	9 pockets
"	48 sugar pockets
Carrots	85 pockets
Dressed ducks	11
Dressed fowls	255
Dressed poultry	50
Dressed turkeys	8
Fowls' feet	2 packets
" "	1 box
Giblets (fowls)	27 packets
Giblets and feet (fowls)	1 lot
Green beans	8 bags
" "	198 pockets
" "	50 trays
Green peas	6 pockets
Heads and feet (poultry)	2 packets
Herbs	1 carton
Lemons	226 pockets
Lettuce	45½ crates
Nectarines	29 boxes
Onions	5 pockets
Peaches	53 boxes
"	33 ½-bushel boxes
"	24 cardboard cartons
Pears	82 boxes
Potatoes	24 pockets
Rhubarb	3 cartons
Sweet potatoes	7 pockets
Tomatoes	258 trays

(b) Other than City Markets

On 31 occasions during the year, either at the request of various firms or as a result of routine inspections, it was found necessary to condemn and destroy considerable quantities of foodstuffs. The commodities dealt with included :-

9,000 tins and bottles comprising mainly fish and fruit and vegetables.

575 packets of portions of poultry, cereals, etc.

3,686 lbs of assorted foods, including 1,011 lbs of meat which had decomposed in a butcher's shop over a weekend due to a power failure in the cold room. Other items were pea flour, biltong, mealie meal, sugar and desiccated cocoanut.

772 assorted items of food (cheese, trays of peaches, poultry).

(c) Food, Drugs and Disinfectants Act

During 1964 some 548 samples of food, falling within the scope of Regulations framed under the above Act, were purchased and submitted for chemical analysis. Some were dealt with by the City Analyst and the remainder were sent to the State Chemical Laboratories. Details are set out overleaf :-

Commodity	No.	Result	Outcome of Prosecution or other action
Boerewors	30	1 unsatisfactory	R10.00 fine
Cooking oil	12	All satisfactory	
Cream	36	All satisfactory	
Dates	3	All satisfactory	
Dried Figs	1	All satisfactory	
Dried Peaches	1	All satisfactory	
Dripping	1	All satisfactory	
Fruit Juice	2	All satisfactory	
Honey	35	3 unsatisfactory	R45.00 recovered in fines.
Ice cream	76	1 unsatisfactory	No action taken as sample only slightly deficient in fat (0.4%). Letter written to producer.
Meat (steak)	1	Satisfactory	
Milk	167	2 unsatisfactory	R20.00 recovered in fines.
Minced meat	108	9 unsatisfactory	R160.00 recovered in fines.
Polony	2	Satisfactory	
Popcorn	3	Satisfactory	
Sausages	70	3 unsatisfactory	R50.00 recovered in fines.
Total samples	548		

Total unsatisfactory : 19
Total fines : R285.00

In addition to the foregoing 4 samples of water from the Municipal water mains are sent each month for chemical analysis. All results were entirely satisfactory.

(d) Various Facets of Food-handling

Of the total inspections 39,025, mostly of a routine nature, were confined to all aspects of the food-handling trades. In many instances written or verbal notices were served and, where necessary, court action was instituted. Some of the matters dealt with are mentioned below :-

Special Surveys of Food-handling Premises

Each year, apart from routine inspections, every business in which food is prepared or handled is subjected to a detailed survey. Special schedules are compiled covering structural conditions, methods of control, hygiene, maintenance and all other relevant public health features. In 1964, 969 premises received attention.

Beach and Race Course Catering

Whenever the influx of holiday makers caused crowds to patronise the beaches, race courses and other large sporting events, special attention was paid to all phases of catering. A large Air Pageant and an "Ideal Home" Exhibition also called for particular notice. On the whole conditions were maintained at a high level and no justifiable complaints were recorded.

One visitor on his return to his up-country home lodged a written complaint in regard to specific unsatisfactory conditions in a certain Beach front cafe as well as conditions generally at beach front catering establishments. Both day and night inspections of the premises specifically referred to showed no evidence to justify the complaint.

Tiling of Walls

In a butchery constructed during the year an alternative to the tiling of the walls was tried out experimentally. The material used was a white plastic type material in sheets 6 ft. by 4 ft. All joints

were welded. To date this experiment has proved highly successful and superior to the usual tiling. No objection will be raised to its use being extended.

Inspections out of Normal Duty Hours

Early morning inspections on one day each week were a regular feature and proved of value. However, with a view to ascertaining circumstances in late hour restaurants, some inspections took place at night. No irregularities were noted.

Desiccated Cocoanut

The Department received advice that a consignment of unsweetened desiccated cocoanut had been released from the Port and was in storage in the City. Initial examination of this cocoanut by another authority had revealed contamination with a coagulase positive strain of staphylococcus aureus and coliform organisms.

The cocoanut was traced and detained pending the results of further samples taken and submitted to bacteriological examination. Certain of the samples again yielded, on culture, coagulase positive staphylococcus aureus and coliform organisms. The firm in possession of the cocoanut surrendered it to this Department for condemnation and destruction.

Food Poisoning

Nine episodes of "food poisoning" were reported during 1964. Details of the outbreaks are recorded, as they occurred, on a monthly basis hereunder :-

January: Two small outbreaks of food poisonings were investigated:-

- (a) A family of five persons were treated at a local hospital but were not admitted. Investigation indicated that the eating of cold chicken was the probable cause, particularly as this chicken was consumed over three days and had not been kept under refrigeration.
- (b) A Coloured family and guests, 18 persons in all, fell ill with food poisoning and were attended to at a hospital but again were not admitted. Fruit salad and cream consumed appeared to be the foodstuffs implicated. The cream was of a well known brand and samples from the same source, on bacteriological examination, were found to be satisfactory. Investigations indicated that the most probable cause was the unsatisfactory condition of the basin and fork used for "whipping" the cream. The utensils were stored in such a manner that they were open to contamination by rodents.

February: Following advice received from the Polyclinic in a Bantu township of the treatment of 25 cases of food poisoning, a prompt investigation was made. The patients were all pupils of a Lower Primary School. All evidence pointed to the source being bacterial contamination of "vetkoekies" prepared by illegal food-handlers and disposed of by illegal sale at the boundaries of this school.

May: On the 12th May an outbreak of food poisoning occurred in a large factory and was at once reported to this Department. Some 500 Bantu workers at this concern were regularly provided with a daily midday meal comprising soup, beans, meat and "mahewu", at two sittings of 250 persons each. Almost immediately after the first sitting 110 Bantu fell ill. Medical attention was at once rendered by the factory medical practitioner. Investigations by this Department quickly revealed that only those who had partaken of the "mahewu" had been

affected. The midday meal was discontinued until such time as all the food handling equipment had been sterilised or, where necessary, replaced. No evidence of a source of infection from the food handlers was apparent and chemical and bacteriological examinations of the "mahewu" were not rewarding. However, the sudden onset and symptoms of the food poisoning were strongly suggestive of a bacterial toxin, probably of staphylococcal origin. All the patients made a quick recovery and there was no recurrence.

November: An outbreak of suspected food poisoning occurred amongst certain students at a University hostel. Some 20 persons were affected. A full investigation was initiated and it was finally considered that the only food which could be implicated was a sauce served with the vegetables. It was found that certain members of the Bantu kitchen staff had small cuts and abrasions on their fingers and hands. These could well have been a source of contamination of the foodstuff involved. The kitchen and equipment were found to be in a sound and clean condition but the warden in charge was advised, in the future, to inspect the hands of members of the kitchen staff daily to ensure that no employees with similar conditions were allowed to handle food. All the cases made rapid recoveries.

December: Four reports of food poisoning were received and investigated during the month.

- (a) Within a 48 hour period following a staff function at a certain studio some 31 persons were taken ill. This was an infective type of food poisoning and the salmonella organism responsible was isolated from six of the persons affected as well as from the remains of certain cakes consumed at the party. Thorough investigations were undertaken both at the studio and at the bakery which supplied the cakes but the actual source of contamination of the cakes could not be established.
- (b) A mother and son developed food poisoning after eating a chicken and laboratory examination showed this to be due to a staphylococcus aureus infection. Investigations at the source of purchase of the chicken revealed much poultry in a decomposing state and 118 fowls, 8 turkeys and 20 ducks had to be condemned.
- (c) Three persons became ill after a late evening meal at a restaurant. Specimens could not be obtained for bacteriological examination and inspection of the restaurant and staff revealed no likely cause.
- (d) Following a report of suspect food poisoning at a local hotel, stool specimens were submitted for bacteriological examination but with negative results. Kitchen, staff and food-handling in the hotel concerned could not be faulted.

In all the above instances the affected persons made a rapid recovery.

Greaseproof Paper

A large consignment of greaseproof paper from Australia was found to have been contaminated en route by an unknown chemical and the problem was referred to this Department. The distribution of this paper throughout the City was stopped pending the identification of the contaminant. This was subsequently ascertained to be a hormone weed killer and, although of relatively low toxicity, the affected paper was considered to be unsuitable for food wrapping purposes. As the paper was destined for the food processing and packaging industry the importing firm rejected the shipment.

Slaughter of Cattle

Early in August an anonymous complaint was received that illegal slaughtering of cattle was taking place in Cato Manor road. By arrangement a Health Inspector accompanied the Station Commander of the South African Police, Mayville, to the address supplied. Six African males were found skinning and cutting up two bovine carcasses that had just been slaughtered. The carcasses were confiscated by the Police and sent to the Municipal Abattoir for destruction. The offenders were arrested and brought before the Magistrate the following morning.

COMPLAINTS/NUISANCES

The number of complaints lodged with the Department amounted to 3,921, and were in connection with the matters set out below:-

Animal keeping	7
Bugs	41
Cockroaches	47
Drainage Appurtenances	38
Defective Drainage (storm and waste water)	474
Fleas	11
Flies	310
Food Hygiene	14
Food (unsound)	11
Housing (illegal)	35
Housing (overcrowding)	27
Lack of Sanitary Accommodation	39
Miscellaneous (unclassified)	75
Mosquitoes	822
Offensive Smells	249
Poultry	69
Refuse Dumping	240
Refuse Removal Services	12
Rodents	366
Shacks	4
Smoke/Air Pollution	12
Structural Defects	110
Unclean Conditions	276
Vacant Land (overgrown, etc.)	629
Ventilation and/or Lighting	3
	<hr/>
	3,921
	<hr/>

It will be seen from the above list that the 3,921 complaints covered a wide range of incidents. In numerical order those connected with mosquito nuisance were the highest, 822 complaints being lodged. However, many of these were found on investigation to involve the same occurrence.

All complaints were dealt with as expeditiously as possible and the majority of nuisances were abated within the time specified in either verbal or written warnings. Recourse to the courts was necessary in some instances, whilst in others the complaint could not be substantiated and the complainants were advised accordingly.

Examples of some of the nuisances which received attention during the year are recorded below :-

(a) Sewer Surcharges

The completion of a new sewer line in Brickhill Road eliminated a source of nuisance to the Technical College, who had frequently lodged complaints with this Department. A

major nuisance was reported in the Point area due to a broken sewer on Railway property. Work on a new main to service this area was put in hand. A further sewage discharge arose in the Indian Housing Scheme at Cato Manor. The matter was referred to the City Engineer and the sewer was repaired. A nuisance of long standing, in Baring Road, was remedied by the provision of adequate sub-soil drainage to the land occupied by the Mansfield Road Boys' High School.

(b) Non-European Sanitary Conveniences

Following upon representations to the City Engineer dilapidated conveniences in Sydenham Road, in the vicinity of the race course, were renovated.

(c) Defective Premises

A vacant house, in a dilapidated condition, situated in Mansfield Road and subject to gross misuse was demolished, whilst another property, in Botanic Gardens Road, also grossly misused by vagrants was demolished. A sub-standard private hotel in Musgrave Road was demolished to make room for flat development. Several other buildings, each a long standing source of nuisance were demolished as a result of departmental pressure. These included the remaining half of a semi-detached dwelling in McArthur Street, a wood/iron dwelling in Bay Terrace and a dilapidated dwelling in Prospect Hall Road.

(d) Inundation by Water

In January a heavy storm water flow caused the Umkutulu River, a tributary of the Palmiet River, to change its course. This resulted in a large acreage of residential and other land being inundated. Certain houses were water bound and privy and drainage facilities were damaged or rendered useless. Mosquito breeding conditions arose and contamination of the flood waters was inevitable. In addition the old river bed became silted up. The situation was further aggravated by the daily discharge of some 4,000,000 gallons of wash-water from the Municipal filter beds into this water course. The area was kept under observation by this Department and steps were taken to minimise the public health risk. The matter was pursued with the City Engineer and the problem was finally resolved. The river now follows its original course and the wash-water has been diverted elsewhere.

(e) Water Supplies

The occupier of a suite of offices in a multi-storey building complained of offensive tasting water from his faucet. Bacteriological examination indicated that the water was grossly polluted and subsequent inspection disclosed that the heavy lids on a roof service tank had become dislodged. Several dead pigeons were discovered in the water. Immediate measures to rectify the position were taken; the tank was flushed out and treated with sterilising powder and the whole of the piping was dealt with similarly. Final tests to ensure that the water was satisfactory were undertaken before the supply was again put into use.

Following this episode all multi-storey buildings making use of service reservoir tanks were examined and several tanks with displaced lids (but no dead pigeons!) were noted. All owners of this type of property were advised of the possibility of problems that might arise and were requested to maintain adequate supervision.

(f) Demolition and Dust Nuisances

Several complaints relating to dust nuisances during demolition operations were received and in most instances the

complaints were justified. Consequently, the various demolition contractors were advised to carry out water spraying when dust was found to be rising. At one site in Gillespie Street the builder had taken over from the demolisher before this Department was called in. The building contractor, however, undertook to use ample water in the preliminary building stages.

(g) Parking of Pantehnicons

Residents in the Lincoln Road area complained of the parking of pantehnicons, from all over the Republic, on Council owned land and of the nuisances arising from this practice. Inspection revealed misuse and littering with foodscraps which favoured the prevalence of flies and rodents. This matter was referred to the appropriate Departments for necessary action. Similar nuisances have arisen in other parts of the City and consideration has been given by the Council to the provision of a suitably equipped site for the parking of these vehicles.

(h) Campers and Caravanners

At certain periods of the year campers and caravanners caused concern by indiscriminately occupying various areas of the City, especially those in close proximity to the main beaches. This Department found it necessary to take action as much fouling of the various areas was noted. The City Police rendered a great deal of assistance in dealing with this problem. Enquiries proved that various properly organised caravan camps, reasonably priced, on Natal South Coast and elsewhere, had accommodation available at the time.

(i) Sanitary Accommodation for Building Workers

Pail privy accommodation for building workers on a block of flats on the Marine Parade gave rise to several complaints. The matter was taken up with the building contractor who expedited connection to the sewer and the pails were removed as soon as possible. Arising from this instance architects were advised to ensure early connection to the sewerage system as a matter of priority when plans were submitted for all buildings in built-up areas. It is recorded that several prosecutions were brought against building contractors who failed to make any provision for sanitary facilities for their workmen.

CHATSWORTH/KWAMASHU

Chatsworth

Routine health inspection was maintained by a full-time Health Inspector under the part-time supervision of a Senior Health Inspector, who was also responsible for kwaMashu. Some of the health inspectional activities in Chatsworth are noted hereunder :-

- i. Extensive development of mosquitoes was found in the Bantu workers' barracks. Nearly all the ablution block soakage pits were found to be defective as a result of flooding or of the inability of the soil to cope with the volume of water. The matter was further aggravated by seepage water flooding surface channels. On representation to the responsible Department remedial measures were put in hand.
- ii. A joint inspection comprising senior officials of the City Engineer's and this Department was carried out with a view to eliminating certain unsatisfactory features at the sewage treatment plant. This scheme, of a temporary nature only, gave rise to much development of both mosquitoes and flies. A great improvement was brought about and the mosquito and

fly nuisance was eliminated. Improvements included complete fly-screening of the sludge tanks and the provision of elementary destructors to dispose of the screenings by incineration instead of burial.

- iii. A stream heavily polluted with effluent from a large piggery traverses a part of Chatsworth and gave rise to considerable nuisance. The piggery concerned is situated outside the City so the matter was referred to the appropriate authority. It is understood that a filtration purification scheme for the effluent is being planned and when completed should materially reduce the nuisance.
- iv. Ten sub-standard trading premises have remained since the area was incorporated in the City. As demolition will take place in the foreseeable future major improvements were not enforced. None the less the maintenance of reasonably hygienic conditions in the various shops, which included food premises, was expected.

kwaMashu

All phases of health inspection were well maintained and, on the whole, conditions remained at a satisfactory level. Some of the activities are itemised below :-

- i. Early in the year heavy rains caused inundation of several areas with the result that prolific mosquito development took place. An area of about $2\frac{1}{2}$ acres in Neighbourhood Unit No. 5, in close proximity to the houses, was quickly dealt with by means of drainage with the co-operation of the City Engineer. Similar conditions in the same vicinity but on the south side of the main canal were dealt with by digging through an embankment and draining into a subsidiary of the main canal.
- ii. Following pressure from this Department the owner of one of the largest General Dealer businesses in the township provided new bulk storage accommodation; previously, gross congestion had existed.
- iii. At one period fly breeding in sewage screenings at the sewage treatment plant proved to be excessive. Improved conditions were obtained by the use of fly traps. However, it was considered that incineration of coarse screenings was essential and this aspect is being pursued.
- iv. This Department continued to co-operate with the Township Management in the campaign against illegal traders who, at times, become active in the Township.
- v. Following inspections and consultations with Bantu Administration (Maintenance Officer) considerable progress has been made with the clearance of open roadside drainage. Most of these drains, being unlined, rapidly become choked with vegetation admixed with quantities of household refuse, much of which latter comes from the scavenging of refuse bins. The initiation of this programme brought about a marked improvement relative to fly and mosquito development as well as reducing rodent activity. Some miles of drainage have already been dealt with and an improvement in the overall general appearance is also now apparent.

XI. MILK SUPPLIES

Due to the geographical position of Durban, with sugar farming predominating along the North Coast and a series of holiday resorts along the South Coast of Natal, the City's milk shed is restricted in the main to the Natal Midlands and East Griqualand. The latter, however, supplies only about 9% of the total milk intake.

Milk from some 600 registered producers is either consigned directly to the City in cans or bulked and refrigerated at ten inland depots and transported in insulated tankers. Approximately two-thirds of the milk arrives in the City in this latter manner.

Three pasteurising depots, situated in or on the periphery of the City receive and process the milk. The distribution within the City is by means of refrigerated pantechinons.

Sterilisation of milk is carried out by two of these factories and here again only milk from registered sources is used. Approximately 2,000 gallons of milk is processed in this manner daily.

Milk Gallonage

The average daily intake during the year was 40,313.2 gallons. Of this amount 33.4 gallons represented shrinkage and spillage. It is estimated that approximately 25% of the total milk intake was sold outside the City boundaries.

Sampling

Regular sampling of milk and milk products was carried out and in addition to routine sampling for the departmental milk laboratory, milk samples were also submitted to the State Chemical Laboratories, the City Pathologist, the City Analyst, and the local State Bacteriological Laboratories.

Samples taken under the Food, Drugs and Disinfectants Act

Milk	:	154
Cream	:	36
Ice cream	:	58

Samples taken for tuberculosis examination (biological) : 35

Prosecutions

Food, Drugs and Disinfectants Act	:	1
Milk (and Milk Products) By-laws	:	Nil
Public Health Act	:	2

Structural Requirements

Regular inspections of registered producers were carried out by three country dairies inspectors, whilst visits were carried out for the purpose of registering new premises, checking deterioration or improvements of existing premises and also for controlling the hygienic production of milk. The following table indicates the structural progress made to dairy premises during the year with the figures for 1963 in parenthesis.

Standard of Premises	Percentage conforming to
91% - 100%	22.01% (21.63%)
81% - 90%	61.10% (59.19%)
71% - 80%	16% (18.85%)
61% - 70%	.016% (.33%)
51% - 60%	Nil (Nil)

The accompanying graph (No. 2) indicates the improvements effected since 1956 to farm dairy buildings.

Inland Balancing Stations

These premises were regularly visited and producers' milk was sampled at the same time. A high standard was maintained as far as the structural and handling aspects were concerned. Producers' cans were also checked and all unsuitable containers condemned.

Raw milk was rejected by departmental officials on the grounds of contamination with visible dirt, acidity and high bacterial counts.

A close watch was kept on the transportation arrangements to ensure that producers' milk was not exposed unnecessarily to dust and heat.

Pasteurising Depots and Ice Cream Factories

These were regularly inspected particularly in regard to handling methods and staff hygiene. Refrigeration facilities at all depots and sub-distributing points were regularly checked.

Several improvements were recorded in the form of structural additions and the installation of new plant and equipment.

Pirate Milk Supplies

Regular checks were made at the Durban Railway Station, tea rooms, restaurants and hotels to ensure that only milk from registered sources entered the City.

Statistics - Inspectional Programme (1963 figures in parenthesis)

Total number of City inspections	1,423	(1,393)
Total number of Ex-City inspections	1,344	(1,868)
Number of initial dairy inspections	44	(42)
Number of country depot inspections/sampling	257	(268)
Total number of dairy inspections	3,024	(3,261)
Number of personal notices served to producers	433	(349)
Number of written notices served to producers	900	(805)
Personnel Vi-tested/immunised	842	(886)

HYGIENIC CONTROL OF MILK SUPPLIES

Regular routine tests were carried out on milk and milk products in a well equipped Departmental laboratory. The undermentioned tests were performed by two lady laboratory technicians under the supervision of the Veterinary Medical Officer, the figures for the previous year being given in parenthesis.

Bacterial counts (Breed Clump Counts)	246	(6,181)
Tests for visible dirt	6,006	(6,273)
Presumptive B. coli counts	2,537	(2,436)
Tests for E. coli Type I (Faecal)	350	(252)
Resazurin Reduction Tests	5,908	(435)
Phosphatase Tests (Aschaffenburg and Mullen)	2,521	(2,376)
Plate Counts (Astell Roll Tube)	2,554	(2,877)
Titratable Acidity Determinations	35	(30)
Brucellosis (Stained Antigen Ring Test)	1,192	(393)
Mastitis (Direct Microscopic)	6,845	(6,597)
Inhibitory Substances (T.T.C. Method)	3,149	(1,240)
Thermoduric Organisms	7,916	(6,178)
Sterility of Sterilised Milk	20	(18)
Clot on Boiling Tests	15	(18)
Freezing Point Determinations (Hortvet Cryoscope)	4	(5)
Butterfat Determinations	5	(6)
S.N.F. Determinations	5	(6)

The following reflects a summary of tests carried out on various dairy products :-

(a) Pasteurised Milk

No raw milk is sold in the City. Pasteurised milk, processed by three milk dealers was regularly sampled.

In addition to the routine tests listed below, regular inspections and line-sampling were carried out. All three milk processing factories also made extensive use of their own laboratory services to control the quality of their products.

Test	No. Samples (Bottled milk)	Percentage Satisfactory	No. Samples (Milk in cans)	Percentage Satisfactory	No. Samples (Milk in cartons)	Percentage Satisfactory
B. coli (presumptive)	785 (881)	89% (85%)	140 (131)	86% (70%)	201 (146)	75% (78%)
B. coli (faecal)	200 (224)	100% (100%)	26 (7)	100% (100%)	15 (6)	100% (100%)
Phosphatase	785 (881)	100% (100%)	140 (131)	100% (100%)	146 (201)	100% (100%)
Plate counts	785 (881)	77% (71%)	140 (131)	85% (69%)	146 (201)	79% (65%)
+Thermotolerant organisms	785 (881)	74% (63%)	108 (131)	85% (60%)	106 (201)	84% (65%)
Antibiotics	18 (20)	95% (100%)	-	-	-	-

+ An arbitrary standard of 15,000 organisms per ml. was used for thermotolerant organisms.

Satisfactory results were always obtained on tests for sterility on sterilised milk processed by the two main milk dealers in the City.

(b) Ice Cream

This commodity was manufactured by two companies in Durban but in addition ice cream was also introduced from the Rand and Pretoria by two firms.

The following tests were performed on ice cream samples:-

Test	No. of Samples	Percentage Satisfactory
Phosphatase	699 (285)	100% (100%)
B. coli (presumptive)	699 (285)	84% (85%)
B. coli (Faecal)	11 (8)	100% (100%)
Plate count	699 (285)	94% (91%)

The control of the hygienic quality of ice cream was extended to the regular sampling of vendors of bulked ice cream.

(c) Soft Dairy Mix

All soft dairy mix was manufactured by an ice cream factory in the City. The pasteurised product was regularly sampled at the factory and at all tea rooms and restaurants where dispensing machines were installed.

Test	No. of Samples	Percentage Satisfactory
Phosphatase	348 (368)	100% (100%)
B. coli (presumptive)	348 (368)	83% (90%)
B. coli (faecal)	15 (2)	100% (100%)
Plate counts	348 (368)	96% (94%)

(d) Cream

Only pasteurised cream, processed in the City by registered milk dealers, was sold to the public.

Test	No. of Samples	Percentage Satisfactory
Phosphatase	157 (156)	100% (100%)
B. coli (presumptive)	157 (156)	84% (80%)
B. coli (faecal)	10 (3)	100% (100%)
Plate counts	157 (156)	97% (85%)

(e) Iced Confections

Many frozen "suckers" contain a percentage of milk or powdered milk, and as the handling of this commodity by street and tea room vendors sometimes leaves much to be desired, the product was sampled and tested bacteriologically from time to time.

Test	No. of Samples	Percentage Satisfactory
B. coli (presumptive)	86	50%
B. coli (faecal)	4	100%
Plate counts	86	91%

The accompanying graph (No. 3) indicates the presence of coliform organisms in pasteurised milk and milk products from 1955 to date. The apparent decline during 1960 - 1961 followed the promulgation and introduction of stricter bacteriological standards.

(f) Producer (Farm) Milk

The bulk of raw milk for pasteurisation arrived in the City in insulated road tankers after being collected at inland balancing depots. Extensive field work was carried out by the Veterinary Medical Officer and the three country Dairy Inspectors in respect of the structural and hygienic requirements of this Department. The bulked herd milk from each producer was sampled approximately once a month and submitted to the following tests :-

Test	No. of Samples		Percentage Satisfactory	
Breed Clump Counts	246	(6,181)	71%	(80%)
Resazurin (1 hour)	5,856	(120)	90%	(75%)
Visible Dirt	6,006	(6,273)	96%	(87%)
Thermoduric Organisms	5,954	(4,171)	85%	(76%)
Mastitis	6,117	(6,230)	90%	(90%)
Brucellosis (Stained Antigen)	1,192	(298)	90%	(89%)
Antibiotics	2,540	(697)	95%	(90%)
Tuberculosis (Biological)	35	(15)	100%	(100%)

During the period under review the Breed clump count on raw milk was replaced by the one hour resazurin test. In addition to the various advantages ascribed to this test, producers were also furnished with the test results at an earlier date.

Tanker supplies were regularly tested as under :-

Test	No. of Samples		Percentage Satisfactory	
Resazurin (1 hour)	808	(620)	70%	
Thermoduric organisms	808	(779)	46%	(65%)
Antibiotics	605	(113)	90%	(95%)

An arbitrary standard of a maximum of 50,000 organisms per millilitre was adopted for thermoduric organisms in raw milk. The presence of excessive numbers of these organisms is indicative of unhygienic production methods and these test results therefore greatly assisted in the departmental inspectional services rendered to producers.

The handling and storage of milk at inland depots also received attention and in some instances the management was requested to effect certain improvements.

Although there has been a gradual decrease in the number of registered producers in active milk production, the average daily production has increased from 75 gallons in 1963 to 95 gallons for the current year. During the period under review there was no shortage of available fresh milk from registered sources. However, as a result of increased milk consumption in the City and its environs, the margin between the quantity of available fresh milk and the actual intake into the City has at times become dangerously narrow.

The accompanying graph (No. 1) is a breakdown of milk producers, based on a daily production basis.

Producers have been encouraged to install mechanical milk cooling facilities and 68% (63% in 1963) of all farm premises are now thus equipped. In the case of all new producers this departmental requirement was enforced.

Approximately 21% (17% in 1963) of producers make use of milking machines and milking parlours appear to be increasingly popular.

An excellent service was provided for dairy farmers by the professional officers of the animal husbandry division of the Cedara Agricultural College, to trace and rectify mechanical faults in milking machines.

The testing for inhibitory substances in milk was increased and attention paid to producers, especially where traces of penicillin were found to be present in the milk.

Animal Diseases Affecting Milk Supplies

Mastitis

Approximately 10% of all routine herd samples were found to be positive for chronic streptococcal mastitis when gravitational cream smears were examined.

In several herds outbreaks of an acute form of staphylococcal mastitis adversely affected milk production. Producers were assisted by the Departmental milk laboratory and the State Veterinary Diagnostic Centre at Alberton to combat these outbreaks.

Brucellosis

Tests for the presence of this disease were regularly carried out and 10% of raw milk samples were found to be either positive or suspicious. A total of 178 herds, involving approximately 30,000 animals, were immunised by the State Veterinary Department which also initiated a comprehensive survey of the incidence of this disease, the use of the Strain 19 vaccine and various other measures.

Tuberculosis

Biological tests (35) were carried out for this Department on producers' raw milk that was considered suspect. All tests proved negative.

Intradermal tests revealed a heavy incidence of bovine tuberculosis in certain areas of the Natal Midlands and the South Coast. A total of eight herds were successfully treated with tuberculostatic drugs. At present 103 herds are registered under the Government Accredited Herd Scheme.

Calf Mortality

Many future and potential milk givers were lost as a result of faulty and unhygienic calf rearing methods. Verminosis, calf paratyphoid, coccidiosis, and pediculosis went hand in hand with unscientific farming methods.

Piroplasmosis

An increase of 50% in the incidence of redwater in cattle, in many instances with fatal results, occurred. Severe outbreaks of this disease were encountered in the Southern areas of Natal.

"Green Oats" Poisoning

Early frost in the Natal Midlands caused cattle mortality

and reduced milk production in many herds. Although the pathogenesis of this condition was somewhat obscure, therapy for hypomagnesaemia (grass tetany) proved to be effective in many cases.

Infertility

Serious reproduction problems existed in many parts of the milkshed. Vibriosis appeared to be the main infective cause of infertility. Functional sterility as a result of unscientific feeding methods was also prevalent in many areas.

The Natal Artificial Insemination Co-operative, with its bull-station at Thornville Junction, did excellent work to combat breeding problems due to genital infections and also to improve the quality of dairy stock.

During the period under review a total of 12,880 first inseminations was carried out, resulting in a high first conception rate of 71%.

This Co-operative has at its disposal twenty-two bulls of proven quality. Breeds include all the well known dairy as well as certain beef types.

Some 400 active members made use of this service and semen was also supplied to other institutions.

Facilities are available for the storage of frozen semen (-196°C) either in liquid nitrogen or dry ice. The effect of this is that semen is now available from proven sires at all times and can be transported to distant parts of the country without deterioration.

Other Diseases

Other diseases which affected the production of milk directly or indirectly have been mineral (arsenic, insecticides, urea) and plant poisoning (inkberry bush, tantana, tulip, prussic acid, matricaria, bloat). Outbreaks of anaplasmosis, anthrax, quarter evil, lumpy skin disease and diplo-diosis were reported from time to time.

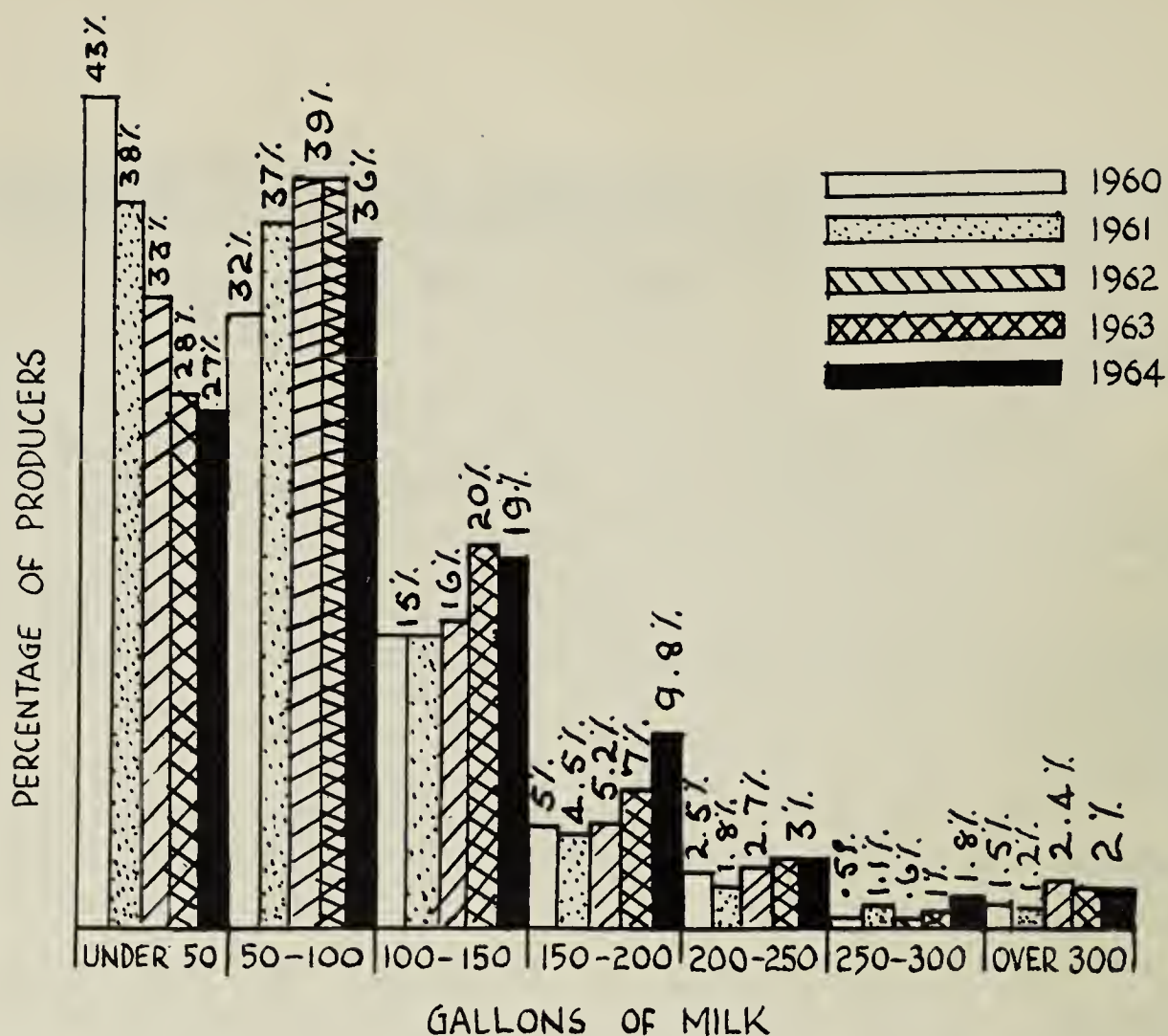
Certain of the abovementioned information has been made available through the courtesy of the Assistant Chief, Veterinary Field Services: Natal.

General

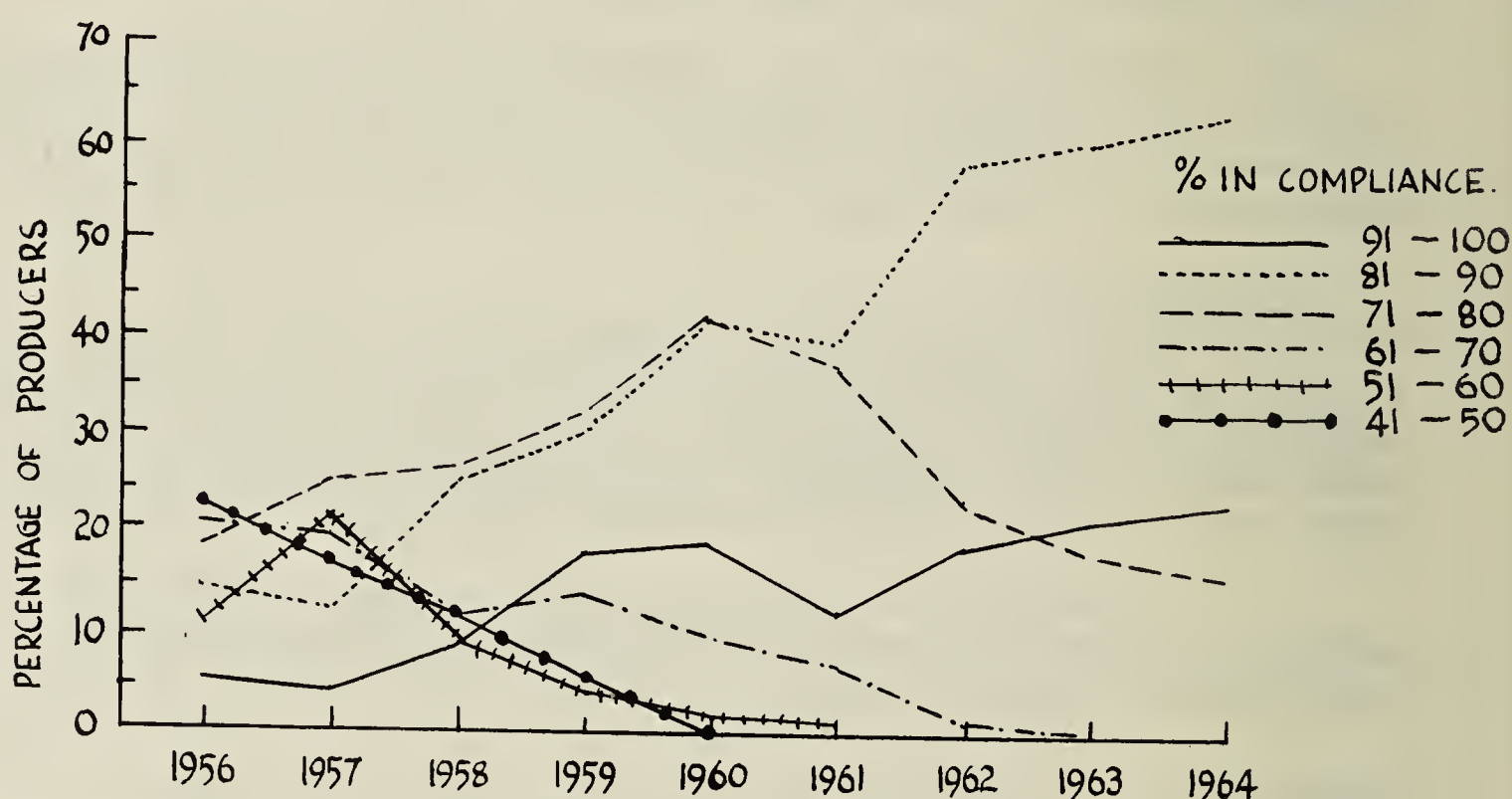
1. Ten final year veterinary students from Onderstepoort spent three weeks in Veterinary Hygiene Section of this Department and at the City Abattoir as part of their vocational training in Special Hygiene and Veterinary Public Health.

2. As in the past this Department, at the invitation of the Natal and East Griqualand Dairy Farmers' Association, provided a stall at the Royal Agricultural Show in Pietermaritzburg. Demonstrations and models of special interest to farmers were exhibited. These included the control of fly breeding, mosquito control by biological methods, rodent control, food values of milk, laboratory tests performed on milk, farm dairy buildings with special reference to the cost of erection and the hygienic handling of milk at country depots. A Dairies Inspector from this Department was on duty to assist dairymen with any problems.

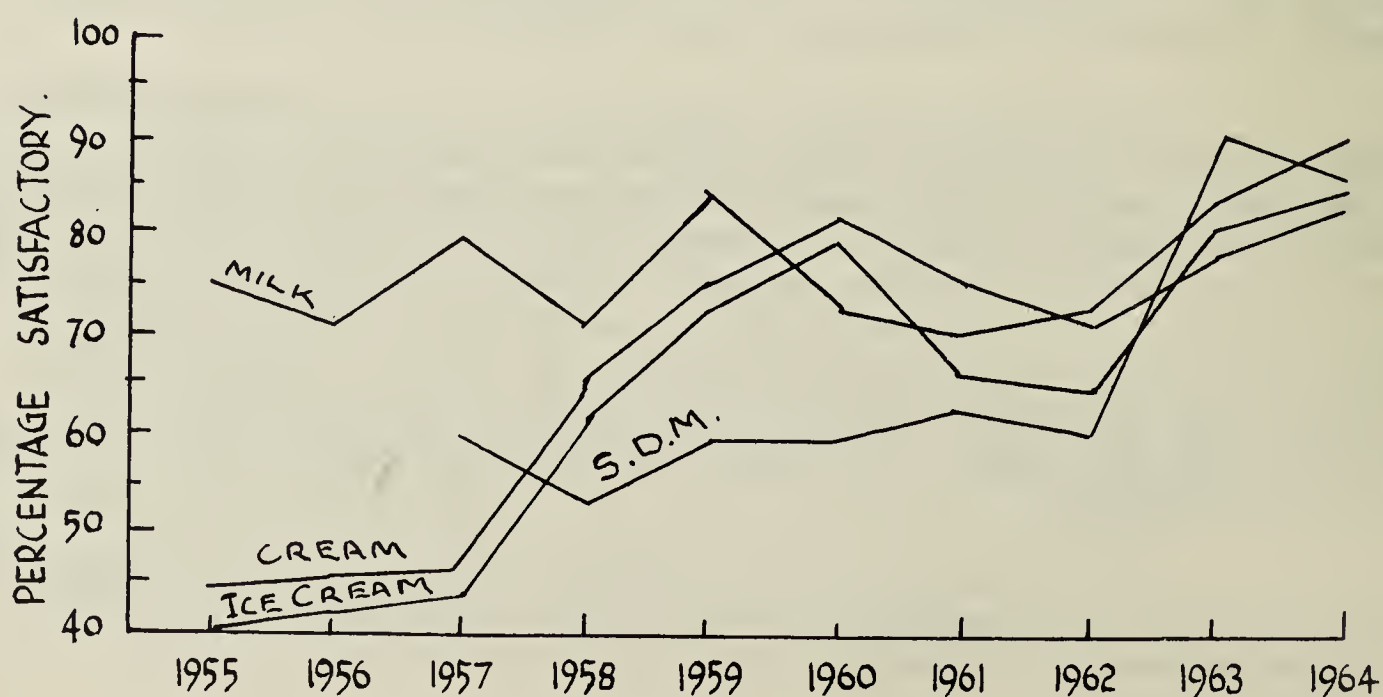
3. The Veterinary Medical Officer undertook the professional duties at the City Abattoir in the absence of the Abattoir Director and the Veterinary Officer.



1 CLASSIFICATION OF PRODUCERS ON A DAILY PRODUCTION BASIS.



2 STRUCTURAL IMPROVEMENT OF FARM DAIRY BUILDINGS.



3 PRESENCE OF COLIFORM ORGANISMS (PRESUMPTIVE) IN PASTEURISED MILK, CREAM, ICE CREAM AND SOFT DAIRY MIX.

XII. FIELD HYGIENE

In dealing with pests this section has endeavoured to keep pace with new trends in control, resistance factors and equipment. No upsurge in any particular insect or pest was noted and the staff and equipment proved sufficient to cope with nuisances when they arose.

Mosquitoes

During the year 822 complaints of mosquitoes were investigated; in the majority of instances *Culex fatigans* was the species responsible.

A breakdown of the sources of breeding showed :-

Tins, drums, old tyres, bottles etc.	279
Defective drains in sub-floor areas	87
Defective septic tanks/soakpits	113
Choked storm water drains	52
Natural swamps (principally Bayhead)	96
Defective sanitary fittings	56
Unsolved	88
Unjustified complaints	51

In 495 instances the source of nuisance was located within a radius of 100 yards of the complainant's premises and in only 140 cases did the radius exceed 100 yards.

Prolific mosquito breeding was located in swamps at the Bayhead and gave rise to a severe nuisance to residents overlooking this area. The swamp area falls under the jurisdiction of the South African Railways Administration.

Following discussions late in 1963 and a Council deputation to Cape Town on 9th April to interview the General Manager, the Railways Administration acted upon a suggestion of this Department and approached the mosquito problem anew. In place of intensive spraying with D.D.T. and Compound 4049, selective spraying was commenced and intensified ditching coupled with the introduction of fish life was introduced. A marked reduction of mosquito breeding and a corresponding lessening of nuisance was noted. No mosquito complaints from April to December 1964 were attributable to this source.

The full effects of the Departmental biological mosquito control programme became increasingly apparent during the year under review and a comparison of annual insecticide costs for mosquito control illustrates the savings effected in this direction with an accompanying greater degree of control.

Costs - Mosquito Insecticides

<u>Year</u>	<u>Annual Cost</u>	
1959	R8,790) Introduction of biological control
1960	R3,600	
1961	R4,357	
1962	R2,304	
1963	R2,020	
1964	R1,495	

Analysis of Anti-Mosquito Measures

<u>Yards Ditching</u>		<u>Oil used</u>		<u>Other Insecticides</u>	
1963	1964	1963	1964	1963	1964
359,730	447,192	225 gals.	142 gals.	313 gals.	238 gals.

Mosquito Control in Maturation/Stabilisation Ponds

Fish introduced into Chatsworth sewage ponds in September 1963 and January 1964 thrived and no mosquito development was located during the year. In December 1964 approximately 3,000 lbs of fish were netted from these ponds for stocking purposes and supplied to the Centenary Aquarium for feeding sharks.

No mosquito breeding was located in the sewage ponds at kwaMashu and fish from these ponds were supplied to adjoining local authorities and to the South African Railways Administration for stocking into Bayhead swamps. The total weight of fish removed from these ponds during 1964 amounted to approximately 8,780 lbs, 6,150 lbs of which was supplied to the Bantu Welfare Society for distribution to indigent residents in kwaMashu.

Bugs (Cimex)

In 1961 the Department took over bug control in Bantu institutions from the Department of Bantu Administration, the estimated saving being R4,460 per annum. Since then, despite the added burden of bug control in the kwaMashu hostels, the actual saving was increased to R5,825 per annum for the year 1964.

This additional saving was brought about by a change in the modus operandi. Previously, irrespective of bug infestation all institutions were treated three times annually. During 1964 regular inspections were carried out and spraying measures only adopted when bugs were found. This policy was decided upon for the following reasons.

- (1) It was considered that inmates of these institutions should not be exposed to the dangers of insecticidal contamination unnecessarily.
- (2) Operators, spraying as a routine tended to become careless, areas were omitted, complete insect destruction was not achieved and this, in itself, apart from the necessity of retreatment, could have afforded the particular insect an opportunity of building up resistance to the insecticide.
- (3) The routine spraying was a needless waste of labour and insecticide.

The result of this method of control has reduced insecticidal costs from an estimated R1,800 in 1961 to R435 in 1964, and no increased incidence of bugs has been recorded.

No resistant strain of bug to Compound 4049 was observed and this has remained the insecticide of choice throughout the year.

Flies

The number of complaints received and investigated during the year totalled 310. The sources of nuisance leading to these complaints were :-

Garden cuttings and compost heaps	82
Manure	28
Poultry keeping	40
Sports Fields	2
Refuse receptacles	55
Stables	3
Dumping on vacant land	13
Other conditions	20
Unsolved	52
Unjustified	17

In a City such as Durban with climatic conditions ideally suited for rapid fly development, the number of complaints speaks highly for the hygienic standards of the inhabitants and the co-operation of the householders in preventing this nuisance from reaching major proportions.

The practice of fly index baiting introduced in 1963 was maintained throughout the year with very satisfactory results; besides reducing the incidence of adult flies these traps furnished the health inspectorate with an indication of fly prevalence in their respective areas.

It is trite to state that the control of flies solely by insecticidal treatment is impractical, and that good basic sanitation with the use of insecticides only in cases of emergency gives the best results. None the less it is often forgotten in practice.

Materials used

Insecticide		Poison	
1963	1964	1963	1964
Nil	10 gals.	741 lbs	252 lbs

Rodents

Rodent control is maintained by seven General Assistants under the direction of a Senior General Assistant.

In all large new building undertakings the storage of quantities of building materials and rubble provided rodent harbourage while scraps of waste food from workmen made food supplies available for rodents. The solution lay in "good housekeeping" and sanitation coupled with regular poisoning. Pressure was brought to bear on offending contractors to maintain the required standards.

Once again blood anti-coagulant poisons have proved the most effective and the approximately fifty poison stations throughout the City were regularly baited with this material.

No undue high incidence of rodents was noted, however, as in all large cities, the destruction of rodents is an endless undertaking.

Detail

Rodents destroyed		Rodents submitted for plague index		Poison used	
1963	1964	1963	1964	1963	1964
3,549	2,406	162	219	1,018 lbs	1,158 lbs
				1,692 gms.	2,247 gms.

Cockroaches

Following an investigation carried out by the Organisation and Methods Officer, the original roach spraying unit was absorbed into the gang responsible for bug spraying. Cockroach control in sewers and stormwater drains was not therefore undertaken as a routine measure but was carried out when necessary by any of the sectional field gangs.

A Thermal Fog insecticide applicator proved highly efficient in treating markets, compounds, and, in selected instances, stormwater and sewer catchpits. The insecticide found most effective in this machine was a 5% Malathion solution or 0.5% Pyrethrum solution,

both used in a white oil base. The wearing of respirators and protective clothing by the operators was insisted upon.

For residual treatment 0.5% Diazonon was found to give the best results and no resistant strain of roach was noted against this material.

Insecticide used		Manholes treated	
1963	1964	1963	1964
114 gals.	112 gals.	47,155	43,319

General

During the year an investigation by the Organisation and Methods Officer was carried out into the workings of the sectional labour force. Certain changes were effected in the field gangs, whereon the number of labourers per gang was reduced but the number of gangs was increased and, as has been stated previously, the bug and cockroach gangs were combined. In all the establishment of labourers was reduced from 98 to 86.

The standards set by the Organisation and Methods Officer as a basis of work output per labourer per day were assessed at :-

Bush Clearing

Cutting only	...	600	square yards
Cut and stack	...	500	" "
Cut and remove	...	250	" "

Ditching

A minimum of 60 linear yards.

Since adopting the recommendations no difficulty has been experienced in maintaining the standards set.

XIII. ALLIED HEALTH SERVICES

The City Engineer has kindly furnished the following information on certain services of public health importance undertaken by his department.

1. WATERBORNE SEWERAGE

Old Borough

The reconstruction of old sewers in the central area has continued. Extensions to the reticulation have been carried out to meet new development in the area between Brickhill Road and Playfair Road.

Wherever possible within the Old Borough, waterborne sewerage has been provided.

Incorporated Areas

Minor extensions to the reticulation have been carried out but, except where extensions are considered essential for health reasons, it has been the policy to restrict further extensions where the existing sewers are being surcharged.

Work has continued on the laying of the sewerage reticulation in the Hillary area. However, this system will not be connected to the trunk sewer until the Southern Disposal scheme is in operation.

Contracts have been let for the construction of submarine pipelines which will provide sea outfalls for the Central and Southern Disposal Works, and will enable waterborne sewerage to be extended to areas at present unsewered.

2. CLEANSING SERVICES

Collection and Tips

Cleansing services throughout the City and the recently occupied Indian areas of Merebank and Chatsworth, were carried out regularly during the year and the quantity of street sweepings, house and trade refuse, continues to increase.

This increase, as in the previous year, was met by following the policy of replacing smaller capacity vehicles by those of larger capacities. The Department is still pursuing the policy of replacing open bodies by enclosed-bodied vehicles whilst the mechanically loaded vehicles continue to operate in the business areas of the City. The disposal of refuse by land reclamation methods on the Springfield Flats and the Bluff valley continues satisfactorily.

Barracks

With the provision of accommodation at the Chatsworth Indian Housing Scheme a decrease in the population of the Magazine Barracks was recorded during the past year.

Public Conveniences

One new block of conveniences was constructed at the Blue Lagoon to replace the original which was demolished to permit of road development.

3. WATER SUPPLIES

Durban's daily average water consumption during the year 1963/1964 was 54,626,705 gallons which represents an increase of approximately $3\frac{1}{2}$ million gallons compared with the previous year. Regular bacteriological and chemical examination of water taken from all parts of the City and at the district water works have been made throughout the year and the high quality of the drinking water has been maintained.

4. PUBLIC SWIMMING BATHS

Regular checks of bath waters have been maintained and British Ministry of Health Standards applied. Analytical results have been furnished regularly to the City Health Department.

5. BATHING BEACHES

Bacteriological surveys of Beach and Harbour waters have been carried out, and the results of tests have been sent to the City Health Department at regular intervals.

6. ATMOSPHERIC POLLUTION

Smokeless Zones

Following the promulgation of the amendment to the Smoke Control By-laws establishing the third Smokeless Zone, 1,500 advisory notices were despatched to persons operating fuel burning appliances in the area. Many applications for temporary exemption were received, but exemptions for one year were only granted in cases where appliances might need extensive modification or replacement. No exemptions were granted where smokeless fuels could be used on the appliance without mechanical modifications. Over the year the necessary advice, instructions and stoker demonstrations have been given to expedite a smooth change-over to smoke-free operation in the new zone and to ensure compliance with the regulations in the other zones and throughout the City. Eighty notices of contravention have been served to expedite compliance with the regulations and 270 smoke complaints have been dealt with.

Smoke Control

The monitory and advisory scheme with regard to industrial smoke control continued over the year and some seventeen firms qualified for the award of the Council's Certificate of Merit. The vast majority of firms are now capable of operating in compliance with the smoke regulations and negotiations continue with the remainder in a joint effort to solve any remaining difficulties. The City Engineer's prior approval powers have been used to ensure that all new installations can comply with the regulations and appliances costing R148,842 have been approved this year. Liaison with the S.A.R. Smoke Inspector has been maintained and 398 instances of locomotives emitting excessive smoke have been reported to him for attention. Diesel smoke has been curbed by sending 1,655 vehicles to the Municipal Testing Grounds and reporting 1,313 instances of smoking Corporation vehicles to the Transport Department for attention. Smoke from shipping has been kept under control by visits to ships and all those smoking at the time of the visit took steps to rectify the trouble.

Odour Control

It is pleasing to report that following the close scrutiny of the air pollution control facilities prior to the establishment of the new oil refinery, no odour complaints have been received this year. Twelve complaints were investigated with regard to the older oil refinery and ten with regard to the Whaling Station, leading to the reconstitution of the Joint Odour Control Committee to expedite the resolution of this problem. Agreement was reached on the installation of a new odour scrubbing plant to be operating in 1965. The North Coast odours were experienced on 41 occasions according to the 151

reports investigated by the Department and at the end of 1963 it was established by low level flights conducted by the C.S.I.R. that odours from S.A.P.P.I. at Mandini were drifting in to the Durban area. Representations to the Company led to the formation of a joint liaison committee to investigate and expedite the introduction of control measures. This will involve major plant changes and it will be some time before these are completed and the results can be assessed.

Dust Control

A dust survey has been commenced to establish the nature and amount of dust deposited in the various areas of the City and a campaign against dusty industries has been initiated. The City Engineer's Department assisted the C.S.I.R. in taking samples of particulate matter using a high volume sampler for the determination of benz-pyrene, which is believed to be associated with the development of lung cancer.

Development Control

All Trade Licences, Building Plans, Applications for Permission to Conduct Offensive Trades and sales of Corporation Land to Industry were reviewed throughout the year to ensure that adequate provision was made for the control of air pollution from smoke, dust, ash, grit, fumes and odours.

Durban Air Pollution Conference

Some 200 delegates attended the C.S.I.R. Air Pollution Conference on "The Implications of Air Pollution Control" in September, 1964, and active interest was shown in the papers presented and the exhibition of instruments arranged.

MEAT SUPPLIES

The inspection of all meat for consumption in Durban is carried out at the Municipal Abattoir by qualified staff under the supervision of the Director, Dr. F.E. Cavanagh, B.V.Sc., to whom I am indebted for the subjoined report :-

"Slaughterhouses

The Durban Municipal Abattoir is the only slaughter house permitted within the official "controlled area" bounded by Maidstone, Botha's Hill and Winklespruit, but in actual fact serves a very much larger area. This abattoir has also been approved as an export and quarantine establishment by the Government, and is accepted for these purposes by the British Ministry of Food.

Accommodation

Accommodation in the Abattoir provides for a four-day stand-over of livestock necessary to supply the needs of the controlled area. During the past year the numbers of animals handled were 146,247 bovines, 572,887 sheep and goats, and 62,681 pigs, and although the flow of livestock was not always even, at no time was the abattoir unable to accommodate the animals received.

System of Slaughter

The Slaughter of Animals Act No. 26 of 1934 (as amended) lays down methods which may be used in the slaughter of animals. At Durban, bovines are first stunned with humane killers and pigs

are electrocuted, but sheep and goats are slaughtered by throat cutting in deference to the religious scruples of the Mohammedan community. Special casting pens are provided for Kosher slaughtering.

Ante- and Post-Mortem Inspection

Both ante-mortem and post-mortem examinations are carried out by veterinarians. Carcasses and offals are inspected in accordance with the Regulations published under the Public Health Act No. 36 of 1919, by a staff of qualified meat inspectors under the supervision of veterinarians.

Condemned and Waste Materials

The cost of processing condemned carcasses, waste materials, etc. is met from the proceeds of the sale of by-products approximating some R90,000 per annum.

Butchers' Shops

Supervision of premises throughout the City is carried out by the City Health Department.

Animals Slaughtered and Carcasses Condemned

	Bovines	Calves	Swine	Sheep	Goats
Whole Carcasses condemned	1,003	466	2,401	1,278	106
Portions of Carcasses condemned in lbs	444,173	622	50,084	2,263,434	4,632
Total number of animals slaughtered	133,660	12,587	62,681	535,989	36,898

XIV. GENERAL

NEW OFFICE BLOCK

The City Health Department, in taking occupation of its new headquarters at the Old Fort Municipal Centre on 1st June, 1964, reached another milestone in its history. The origin of the Department is somewhat obscure but the Town Council created a "Sanitary" Department in 1870, and some four years later appointed a part-time Medical Officer of Health to advise the Corporation on health matters. By the turn of the century the health services had assumed a recognisable form as by that time there were two departments, a Sanitary Department under the direction of the Chief Inspector of Nuisances and a separate Health Department under the direction of a whole-time Medical Officer of Health. By the early 1920's the Sanitary Department had been accommodated in the Old Court House for some time and the Health Department occupied offices on the first floor of the City Hall. Later in the decade, however, the two Departments were amalgamated and centralised in the Old Court House and the adjoining Milton House. In 1931 the Peri-Urban areas were incorporated thus necessitating a much increased staff establishment which greatly congested the limited office accommodation available. By 1938 the position was acute and as a matter of expediency the Department was moved to the Old Girls' High School in Gale Street as a "temporary" measure but, due to the War and other factors, it was not possible to secure improved conditions although steps had been taken by minor alterations and addition, and a degree of decentralisation, to make do with the existing facilities. Some five years ago, however, the City Council authorised the construction of a modern centralised building to accommodate the staff of over 460, a clinic, as well as works and administrative sections. The purpose-designed homogenous unit includes a health educational auditorium, immunisation clinics, a modern milk laboratory and administrative offices and is designed to provide for normal departmental expansion in the future. A photograph of the new building is included in this report.

VEHICLE AND MACHINE VENDING

Applications were lodged with the Department for authority to use in the local food trade two new modes of vending which had hitherto not been encountered in Durban although in use overseas. These involved vehicles equipped with a soft ice cream dispenser in the one case, and static automatic food vending machines in the other. Both methods of selling food were precluded by existing local legislation and although tentative approaches by interested parties had been received in past years the Department had been obliged to discourage prospective vendors on legal grounds.

The development of both types of equipment had, however, reached the stage, technically, whereby design and equipment complied with reasonable public health standards. In investigating this matter, authorities in overseas countries, notably Great Britain and the United States, were consulted. It appeared that, provided the equipment was purpose-made to incorporate public health safeguards and the local authority could be satisfied that hygiene practices and procedures were of a high standard, vehicle and machine vending of perishable food could be permitted without undue risk and therefore the Department was no longer justified in maintaining an attitude of opposition on purely public health grounds.

In giving consideration to amendment of the Food By-laws a point which had to be considered was that automatic machine vending was not covered by licensing control. With regard to mobile vending of food it was considered desirable that, as a prerequisite, vehicles should be approved and registered by the City Medical Officer of Health.

Other aspects which required to be entrenched in the By-laws included authority to control (i) minimum specifications of vehicles and equipment; (ii) food-handling methods; (iii) the range of food authorised to be sold from vehicles; and (iv) the premises from which vehicles would operate and where the food was to be prepared. The proposed By-laws also incorporated similar control measures in the case of machine vending involving approval of a machine, its location when in use, the range of food to be sold therefrom, the methods of operation and the premises at which the food was prepared.

The Food By-law amendments were approved by the City Council and promulgation is awaited. In the interim, codes of practice respecting these methods of food vending have been introduced, for the information and guidance of interested parties, in which public health requirements are set out in greater detail.

WRAPPING OF BREAD

For many years the Durban City Council has striven to influence the appropriate authorities to enforce, or at least encourage on a voluntary basis, the wrapping of bread. Representations in the past had met with no favourable response and the issue was again raised this year with the Minister of Agricultural Economics and Marketing requesting his assistance and support for the necessary permission to be granted enabling bakers to introduce, on a voluntary basis, facilities for the wrapping of bread, and the sale of wrapped bread at an increased price of not more than one cent per loaf. However, under date 1st July, 1964, the reply intimated that it had already been pointed out (by the Manager of the Wheat Industries Control Board) that the Minister had indicated that he was not prepared to approve the wrapping of bread either on a compulsory or a voluntary basis as there were very substantial reasons why the wrapping of bread was, as far as price and other factors were concerned, not in favour of the ordinary consumer.

UNSOUND FOOD

During the year a number of problems arose with regard to the soundness or otherwise of foodstuffs such as desiccated cocoanut and frozen prawns imported into the Republic. Due to various factors it was not practical for the port health authorities to sample every consignment off-loaded in the harbour area and it was therefore inevitable that occasions arose when goods, on release from bond, were found to be unsuitable for human consumption. Doubt arose as to the legality of the action taken by the Medical Officer of Health of the local authority in seizure and condemnation of the foodstuffs involved. The problem was fully investigated in collaboration with the State Health Department when it was established that the Medical Officer of Health possessed the necessary legal powers and authority to deal with imported articles of food when released from the docks or bond. Furthermore, the State officials concerned decided to intensify the sampling programme particularly with regard to perishable articles or any article which had caused particular difficulty in the past, and undertook to take action, even after the release of such goods, if it was subsequently established by laboratory or other findings that such articles were unsound, if the importer had signed an indemnity.

HOLIDAY FLATS

The City Council during the year considered measures to maintain ordered development of accommodation in the vicinity of the ocean beaches. It appeared that "holiday flats" could be regarded as undesirable as they were usually let for short periods at high rentals to holiday makers, and sometimes were not of a standard of development in keeping with the locality. It was anticipated,

probably as a result of the high rental, that such flats would be occupied by a larger number of people than was perhaps desirable in some localities and would therefore be detrimental to the amenities of the neighbourhood. In an attempt to reach a solution to the problem various factors were considered including a review of tenancy agreements (as most properties were on Municipal leasehold land), restrictions on further development to hotels only, prohibition of short-term letting, control of rents, improved standards of development and the prevention of overcrowding. It was finally decided to adopt a three-pronged approach encompassing firstly representations to the State with regard to rent control, secondly amendment of the town planning scheme and thirdly the adoption of a by-law limiting the number of persons who would be permitted to occupy a bedroom, controlling the number of beds in any dwelling unit and prohibiting use of certain portions of the dwelling unit as sleeping accommodation. The Council adopted the by-law in the form of an amendment to the Public Health By-laws but as the envisaged control was directed towards the raising of amenity standards and preventing "overcrowding" of residential buildings in high class areas above the accepted minimum public health level, it was agreed that administration would be undertaken by the City Engineer.

ADMINISTRATION OF SLUMS ACT

Following upon the investigations of a departmental sub-committee into the modus operandi of Slums Act procedure, the City Council on 7th April, 1964, resolved that, in terms of Section 37(2) of the Act, it deemed it necessary for the proper discharge of any function or duty vested in it or devolving on it to authorise the Public Health Committee to carry out such function or duty on its behalf.

SLUM REGULATIONS

In 1939, Regulations for the Control and Inspection of Premises in Defined Zones for the City of Durban were promulgated under Section 32 of the Slums Act, No. 53 of 1934 to provide the Department with an efficient legal instrument for dealing with sub-standard areas, as against the more cumbersome procedure under the Act. In terms of Section 2(b) thereof the Regulations would apply to all premises situate within such zones as were defined in Schedule "A" and added thereto from time to time.

In recent years the character of the aforesaid zones has tended to change and the general Public Health By-laws have been brought up to the standard of the Regulations. Furthermore, the Slums Act itself has been amended to provide for a different procedure for dealing with slum conditions. Under the circumstances it appeared that the need to retain these particular areas as defined zones had fallen away and that the time had arrived when the existing zones could be deproclaimed. The City Council accepted this recommendation and deproclamation in the Provincial Gazette is awaited.

COMPULSORY IMMUNISATION AGAINST POLIOMYELITIS

Regulations were published under Government Notice No. R.1989 on 27th December, 1963, making poliomyelitis immunisation with the oral vaccine compulsory. In a circular dated 21st January, 1964, the Regional Director, State Health Services: Natal, advised that he was aware that this local authority was already carrying out immunisation in a satisfactory manner and that he would welcome an application for authority to continue this service. In addition the Circular contained the request that the local authority should undertake to administer the oral vaccine free of charge to the public. However, the City Health Department had undertaken free immunisation against this disease since 1955. The City Council at its meeting held on 17th February, 1964, had no reservations regarding the continuance

of this free service but this decision was taken without prejudice to any future action which it may wish to take with regard to an application for the part-refund of the costs.

RE-PUBLICATION OF REGULATIONS UNDER THE PUBLIC HEALTH ACT

The Secretary for Health advised in his letter dated 10th August, 1964, that the Secretary for Justice had decided that all regulations promulgated in the Government Gazette by State Departments should be consolidated and re-published in the Regulations Gazette in substitution for the existing regulations. The law advisers had expressed the opinion that in order to enable the Minister to re-publish the regulations, the provisions of Section 138 of the Public Health Act, necessitating the prior approval of the scheduled local authorities, would have to be complied with. The regulations considered during the year concerned the following :-

- (i) Closing of schools in connection with outbreaks of infectious disease;
- (ii) "Carriers" of infectious diseases;
- (iii) Prevention of malaria and other mosquito-borne diseases and for the destruction of mosquitoes;
- (iv) Mattress-makers and upholsterers.

NOTIFIABLE DISEASES

On 4th December, 1964, the State President proclaimed, in Government Notice No. 1969, tetanus (including tetanus neonatorum) as a notifiable disease in terms of the Public Health Act.

OFFENSIVE TRADES

(i) Petroleum Refinery

Towards the end of 1963 a second refinery commenced operations in the City, and the opportunity has been taken to record, in an Appendix to this report, the various steps which were taken by the Municipal Departments concerned, the State and the Company to control atmospheric and effluent pollution. A photograph of the new refinery is also included.

(ii) Paper Pulp Mill

Arising from a proposal by a company to establish a pulp and paper mill in Durban the City Council authorised, on 31st August, a visit to the parent factory at Nettingsdorf in Austria of a delegation comprising His Worship the Mayor, the City Engineer and the City Medical Officer of Health. It was particularly desirable for the City Health Department to obtain first-hand experience of existing conditions due to strong reservations already entertained regarding the nuisance factor associated with pulping especially in an urban area and, because of the terms of the Offensive Trade Regulations, the City Medical Officer of Health would in due course be called upon to consider and grant or refuse an application for permission thereunder. The visit proved of value as the programme allowed for inspections and discussions, and also for consultations on the spot with two British experts who had been engaged by the City Council to advise it in this matter.

Various aspects with public health implications were given close attention, including the modus operandi of the mill; possible sources of odour generation and emission; dust formation; liquid effluents; water re-uses and other potential hazards. Nothing gained as a result of the visit removed the impression that the establishment of a pulp mill in an urban area would not carry with it an element of nuisance risk, despite stringent safeguards.

(iii) Miscellaneous

During 1964, permission was granted in terms of the Offensive Trade Regulations for the City of Durban in respect of the following trades :-

Brewery
Chemical Works (2)
Dye Works
Hides and Skins (Storing and Drying)
Metallurgical Works (2)
Paint Works
Processing the Products of Petroleum Refining
Soap Works.

PROSECUTIONS - 1964

Code Contravened	Admitted Guilt	Found Guilty	Fine	Remarks
<u>PUBLIC HEALTH BY-LAWS</u>			R	
Structural defects	5	3	70.00	1 case : R10.00 or 10 days 1 case : R8.00 or 8 days 1 case : R5.00 or 5 days 2 cases: Not guilty
Defective drainage	7	2	88.00	1 case : R8.00 or 8 days 1 case : R5.00 or 5 days 2 cases: Not guilty
Defective Sanitary fitments	-	3	23.00	1 case : R10.00 or 10 days 1 case : R8.00 or 8 days 1 case : R5.00 or 5 days 2 cases: Not guilty
Unclean conditions	5	3	78.00	1 case : R8.00 or 8 days 2 cases: R5.00 or 5 days 2 cases: Not guilty
Failure to paint exterior of premises	3	2	48.00	1 case : R10.00 or 10 days 1 case : R8.00 or 8 days
Fly breeding	1	-	10.00	
Absence of refuse receptacles	4	-	9.00	
Uncovered/dirty refuse receptacles	2	-	10.00	
Unsound refuse receptacles	1	-	10.00	
<u>FOOD BY-LAWS</u>				
Structural defects	2	-	15.00	
Defective drainage	-	1	10.00	or 10 days

Code Contravened	Admitted Guilt	Found Guilty	Fine	Remarks
<u>FOOD BY-LAWS</u>			R	
Defective fittings/fixtures/furnishings	1	-	5.00	
Defective plant/utensils	5	-	45.00	
Unclean conditions	19	2	317.00	2 cases: R10.00 or 10 days
Unclean clothing	1	-	5.00	
Unclean utensils/crockery	2	-	20.00	
Failure to repaint interior of premises	4	-	30.00	
Exposure of food to contamination	14	-	183.00	
Exposure for sale of contaminated food	1	-	20.00	
Absence of soap and towels	2	-	10.00	
Absence of protective clothing	5	-	50.00	
Absence of lighting/ventilation	1	-	5.00	
Absence of hot water supply	1	-	5.00	
Absence of refuse receptacle	1	-	5.00	
Utilising food room as sleeping apartment	1	1	20.00	1 case : R5.00 or 5 days
Keeping of wearing apparel in food room	4	1	40.00	1 case : Cautioned and discharged
Keeping of incompatible articles in food room	1	-	5.00	
Wrapping of bread in newsprint	1	-	5.00	
Failure to keep milk under refrigeration	1	-	10.00	
Conveyance of food in unauthorised vehicle	3	-	30.00	
Conveyance of passenger in delivery section of food vehicle	2	-	20.00	
<u>BUILDING BY-LAWS</u>				
Failure to provide sanitary accommodation on building site	4	-	53.00	

Code contravened	Admitted Guilt	Found Guilty	Fine	Remarks
<u>LAUNDRY BY-LAWS</u>				
Structural/drainage defects	3	-	15.00	
Failure to repaint premises	3	-	12.00	
Unclean conditions	3	-	6.00	
Ironing tables of inferior construction	3	-	6.00	
<u>PUBLIC HEALTH ACT</u>				
Sale of unsound food	2	-	20.00	
Failure to guard against contamination of food	2	-	40.00	
<u>FOOD, DRUGS AND DISINFECTANTS REGULATIONS</u>				
Sale of minced meat containing preservatives	9	-	160.00	1 case : Not guilty
Sale of sausages containing excess preservative	3	-	45.00	
Sale of sausages not in conformity with chemical standards	1	-	15.00	
Sale of milk not in conformity with chemical standards	1	-	20.00	
Sale of honey not in conformity with chemical standards	2	-	30.00	
<u>ZONAL REGULATIONS</u>				
Defective drainage	1	-	15.00	
<u>RODENT REGULATIONS</u>				
Rodent infestation	1	-	15.00	
	138	18	1653.00	

XV. STAFF AND FINANCIAL SUMMARY

Recruitment

(a) Medical

Extreme difficulty was again experienced in filling vacancies for both full-time and part-time medical positions. By the close of the year it had not been possible to fill the vacancy for a second Assistant Medical Officer of Health which had been authorised more than twelve months previously. Applications for this post have again been invited.

(b) Technical

The authorised establishment of Health Inspectors was maintained without undue trouble, vacancies being filled as they occurred, mainly from amongst qualified trainees in the City Health Department or by other certificated Municipal personnel. The existence of such a reserve has largely been the means of enabling the complement of Health Inspectors to be kept at or near full strength throughout the year. However, the future outlook in regard to this category of staff cannot be viewed optimistically, due to the fact that a class has not yet been formed locally for the tuition and training of health inspectors in accordance with the recently introduced syllabus for the National Diploma for Health Inspectors. This has been largely due to a paucity of students and some difficulty in obtaining lecturers.

At this time, it is fitting to record the assistance given by the City Council to Municipal employees wishing to take up health inspection as a career. Not only have the benefits of the Council's assisted education scheme been enjoyed by trainee personnel in this Department but older employees, in this and other Municipal Departments, have, subject to certain conditions, been granted three months special leave on full pay for the purpose of enabling them to obtain the prescribed practical experience in health inspection to satisfy the requirements of the Examination Board. It is considered that these facilities have made a very valuable contribution to the maintenance of the Health Inspection Section as a functioning unit during the past trying few years.

Facilities for the tuition of Health Visitors in this City are also presently non-existent. This shortcoming is particularly felt in the case of non-Europeans, which has resulted in a number of this Department's Indian Nurses being obliged to obtain lengthy periods of unpaid leave in order to take a full-time health visitor's course at Kimberley. Not only has this entailed heavy financial and other sacrifices by the employees themselves but this Department has been inconvenienced in having to conduct its child health programmes with the aid of temporary staff.

Organisation and Methods

Upon the invitation of this Department the City Council's Organisation and Methods Officer undertook an investigation of the Field Hygiene Section's gang labour. As a result, certain labour and other economies were introduced, without militating against the efficiency of the pest control programmes. No employee was deprived of employment as a consequence and several employees have been retained supernumerary pending their absorption, in the near future, in extended pest control programmes at Chatsworth.

Amendments to Staff Establishment

(a) Additional Positions

During the year the City Council authorised the undermentioned new posts. Where necessary for purposes of part-refunds in terms of the Public Health Act, the approval of the Secretary for Health was obtained :-

European

1 Clinical Medical Officer

Coloured

1 Health Visitor

1 Health Assistant (Female)

Indian

2 Health Inspectors

2 Health Visitors

1 Assistant

1 Interpreter/Cleaner

1 Labourer

In pursuance of the policy, which has been followed for a considerable time past, the opportunity was taken whenever practicable, of engaging non-European personnel of the respective race groups comprising the City's population in the provision of health services to those groups. In this connection, it is now proposed to appoint two Indian Health Inspectors, a category of health staff not hitherto available locally, for duty in the new Chatsworth Indian Township.

(b) Positions deleted

Indian

1 Health Assistant	This post, which was vacant, was found to be surplus to sectional requirements.
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6 Labourers	As a result of Organisation and Methods investigation. Personnel to be absorbed in extended programme.
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Bantu

2 Health Visitors	Not required pending erection of additional clinics.
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6 Labourers	Posts vacant. Result of Organisation and Methods investigation.
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(c) Re-designation and regrading

Arising from a departmental application one post each of Clerk (Grade I) and Clerk (Grade II) in the Administration Section were re-designated Senior Clerk (Grade III) and regraded accordingly on account of increased duties and responsibilities.

General

It is pleasing to record that a considerable number of this Department's staff have displayed commendable initiative in broadening their public health knowledge, by sitting for and obtaining various public health certificates. This has been evident not only in the technical sections but also in the Administration Section where such technical knowledge is most valuable from an efficiency viewpoint.

STAFF ESTABLISHMENT

Section and Position	No.	Incumbent/Remarks
<u>EXECUTIVE</u>		
City Medical Officer of Health	1	Dr. C.R. Mackenzie, M.B., B.Ch., D.P.H., D.T.M.& H.
Deputy City Medical Officer of Health	1	Dr. G.L. Hilton-Barber, M.B., Ch.B., D.P.H.
Assistant Medical Officer of Health	2	Dr. N.L. Becker, M.B., Ch.B., D.P.H.
		1 post vacant
<u>ADMINISTRATION</u>		
(a) <u>European</u>		
Principal Assistant (Admin.)	1	Thomson, A.H. (M.R.S.H.)
Senior Assistant (Financial)	1	Donkin, F.D.
Senior Assistant (Technical)	1	Poplett, D.J. (M.R.S.H.)
Chief Clerk (Grade I)	1	Kibble, G.A. (Cert. R.S.H.)
Chief Clerk (Grade II)	1	Dyer, R.B. (Cert. R.S.H.)
Senior Clerk (Grade III)	4	
Clerk (Grade I)	2	
Clerk (Grade II)	3	
Clerk (Grade III)	6	
Principal Lady Assistant	2	
Senior Lady Assistant	2	
Lady Assistant	10	2 posted to Immunisation Service
Senior Typist	2	
Typist	4	
General Assistant (Unestablished)	1	
(b) <u>Indian</u>		
Clerk (Grade III)	1	
General Assistant	1	
Assistant	8	
(c) <u>Bantu</u>		
Health Assistant (Grade II)	1	
Watchman	2	
Labourer	1	
<u>EPIDEMIOLOGY</u> , embracing tuberculosis, infectious diseases and venereal diseases control)		
(a) <u>European</u>		
Senior Clinical Medical Officer	2	T.B. Clinics : Dr. P.R. Henson (from 1.5.1964) Dr. M.L.D. Lowe (from 2.3.1964)
Operator - X-Ray (Male)	1	T.B. Clinics
General Assistant	2	(1 Home Disinfection Unit) (1 Immunisation Service)

Section and Position	No.	Incumbent/Remarks
<u>Note:</u> The following staff is posted from the Health Visiting and Health Inspection Sections for full-time duty:		
<u>Tuberculosis Control:</u>		
5 Health Visitors		Field control
2 Clinic Sisters		T.B. Clinics
1 Health Inspector		Field control
<u>Infectious Diseases and Venereal Diseases Control:</u>		
1 Senior Health Inspector		
1 Health Visitor		
(b) <u>Indian</u>		
Health Assistant (Grade I)	6	Field control
Health Assistant (Grade II)	1)	T.B. Clinics
Health Assistant (Female)	2)	
Interpreter/Cleaner	1)	
Labourer	1	Home Disinfection Unit
(c) <u>Bantu</u>		
Health Assistant (Grade I)	15	Field control
Health Assistant (Grade II)	1)	
Health Assistant (Female)	2)	T.B. Clinics
Interpreter/Cleaner	2)	
<u>HEALTH INSPECTION</u>		
(a) <u>European</u>		
Chief Health Inspector	1	Johnston, M.M.
Deputy Chief Health Inspector	1	Clayton, A.
Senior Health Inspector	10	* Ashdown, N.D.
<u>Note:</u> Allocation of Posts:		* + Butler, M.W.
District and Food		Clark, A.G.
Hygiene	6	Crickmore, C.R.A.
Housing and Plans	1	Harris, J.K.
Epidemiology	1	Hornby, A.V.
Dairies	1	Ingram, W.A.
Field Hygiene	1	* McIver, E.I.
		Smith, A.M.
		+ Young, B.J.
Health Inspector	39	Alder, C.H.
<u>Note:</u> Allocation of positions:		* Bateson, J. (resigned 31.3.64)
District and Food		* Benians, P.E.
Hygiene	34	*+ Blair, E.A.
Dairies	3	* Booyens, M.M.
Plans	1	* Brokenshaw, A.D.
Epidemiology	1	* + Burgess, D.W.
	39	* Butler, J.E.
		* Currie, A.
		* Davies, O.S. (from 1.7.64)
		* + de Villiers, P.D.
		+ de Beer, H.H.
		* Green, C.E.O.
		* Griffin, R.E.
		* + Hazle, A.D.
		* Hogan, J.P.

Section and Position	No.	Incumbent/Remarks
		* Hull, V.H. * + Jakins, T.I.N. Keen, F. * Knowles, D.H. * Marsh, H.N. * McCawley, F.G.I. * + Moffitt, N.S. * + Newberry, N. * + Ogden, G.B. * + Pearman, E.F.J. * Phillips, L.G.F. * + Roberts, K.W.C. * Roberts, A.J.L. * Schou, M.S. * Smith, L.J. (from 20.5.64) * Spence, B.D. * + Spencer, D.W. * Sutherland, F.T. Vorster, J.H. * + Walsh, W.W. * + Whitaker, D.G.M. (from 20.5.64) * Worthington, C. * Worthington, L.J. * + Young, N.R. <u>Panel of Health Inspectors for emergency meat inspec- tion duties at Municipal Abattoir</u> Hazle, A.D.; Roberts, K.W.C.; Spencer, D.W. * Denotes Meat and Other Foods Certificate + Denotes Tropical Hygiene Certificate
Health Assistant	12	Trainee Health Inspectors
Senior General Assistant	1)	Rodent Control
General Assistant	7)	
(b) <u>Indian</u>		
Health Inspector	2	
Health Assistant (Grade I)	1	
Assistant	5	Rodent Control
(c) <u>Bantu</u>		
Health Assistant (Grade II)	2	
<u>VETERINARY HYGIENE</u>		
<u>European</u>		
Veterinary Medical Officer	1	Dr. A.J. Louw, B.V.Sc.
Laboratory Assistant	1	
Lady Assistant	1	

Section and Position	No.	Incumbent/Remarks
<u>FIELD HYGIENE</u>		
(a) <u>European</u>		
Supervisor	1	Nourse, A.D.
Senior General Assistant	1	
General Assistant	8	
(b) <u>Indian</u>		
Spotter	2	
Labourer	2	
(c) <u>Bantu</u>		
Health Assistant (Grade I)	1	
Spotter	11	
Labourer	84	
<u>HEALTH VISITING</u>		
(a) <u>European</u>		
Chief Health Visitor	1	Eckhoff, E.J., Medical and Surgical, Midwifery, Mothercraft, Health Visitor's and School Nurse's Certificates.
Senior Health Visitor	1	Rankin, M.H.E., Medical and Surgical, Midwifery, Mothercraft, Health Visitor's and School Nurse's Certificates.
Health Visitor	29	Ø x Anderson, E.M. Ø Barker, M.I. Ø Berghammer, A. Ø Boy, S. (Resigned 31.8.64) Ø x Brown, M.K. Ø x Burdon, C.W. (Retired 22.10.64) Ø Butler, M.A. x Dolkens, S. Ø x Essery, M. Ø Goold, P. Ø x Hamlyn, E.F. Ø x Harding, E. Hook, E.M. Ø Jachimsky, L.M. (from Clinic Sister 1.11.64) Ø x Laue, H. Ø Lloyd, A.A.M.M. (from Clinic Sister 1.11.64) Ø Longmore, F.B. Ø Meyerstein, S.M. Ø x Mitchell, B.I. Ø Muller, M. Ø Norman, F.M. Ø Poulton, M.P. Ø Robinson, J.O. Ø x Stead, R.J. Ø Sutherland, J.W. Ø Taylor, J.S. Ø Ward, J. Ø Watts, D.J. Ø Webb, M.E. Ø x Whiting, A. x Wilde, M.A.
<u>Note:</u> Allocation of positions: Family Health Service 20 Epidemiology: T.B. Control 5 I.D. and V.D. <u>1</u> 6 Immunisation <u>3</u> 29		

Section and Position	No.	Incumbent/Remarks
Clinic Sister	7	<div>∅ Wood, O. (formerly de Preez) (From 3.2.64)</div> <div>∅ x Hunter, J.W.</div> <div>∅ Jachimsky, L.M. (Health Visitor from 31.10.64)</div> <div>∅ Lloyd, A.A.M.M. (Health Visitor from 31.10.64)</div> <div>∅ McCagie, S.M.</div> <div>∅ Pettigrew, E.</div> <div>∅ Weston, M.A.</div>
<u>Note:</u> Allocation of positions:		
Family Health Service	3	
Immunisation	2	
Tuberculosis clinics	<u>2</u>	
	7	
Vacancies at 31st December, 1964 :	2	
Clinic Assistant	12	
(b) <u>Coloured</u>		
Health Visitor	2	<div>∅ Deane, D.P.A. (1 post vacant)</div>
Health Assistant (Female)	1	Vacant
(c) <u>Indian</u>		
Health Visitor	5	<div>∅ Nair, K. (from 3.8.64)</div> <div>∅ Reddy, T.</div> <div>∅ Reddy, R.R.</div> <div>2 Vacancies</div>
Nurse	5	<div>∅ Iyer, S.</div> <div>∅ Kalyani</div> <div>∅ Paul, M.G.J.</div> <div>∅ Papiiah, R.F.</div> <div>∅ Shunmugam, M. (from 1.12.64)</div>
Health Assistant (Female)	12	
General Assistant	1	
Interpreter/Cleaner	6	
(d) <u>Bantu</u>		
Health Visitor (Bantu)	17	<div>∅ Bengu, M.</div> <div>∅ Charles, G.T.</div> <div>∅ Dotwana, H.B.</div> <div>∅ Kgoare, L.</div> <div>∅ Mkiye, L.D.</div> <div>∅ Moholo, D.V.</div> <div>∅ Malamba, M.V.</div> <div>∅ Mlambo, S.</div> <div>∅ Mazibuko, P.A.</div> <div>∅ Mkwanaazi, K.</div> <div>∅ Nala, N.</div> <div>∅ Nkabinde, I.</div> <div>∅ Ngqulunga, O.G.</div> <div>∅ Ndlovana, M.N.</div> <div>∅ Sibiya, F.</div> <div>∅ Tsekiso, A.</div> <div>∅ Zulu, K.M.</div>
Health Assistant (Grade II)	1	
Health Assistant (Female)	8	
Interpreter/Cleaner	6	
		<div>∅ Denotes Midwifery Certificate</div> <div>x Denotes Mothercraft Certificate</div>

Section and Position	No.	Incumbent/Remarks
<u>IMMUNISATION</u>		
<u>Note:</u> European staff comprising 3 Health Visitors, 2 Clinic Sisters and 2 Lady Assistants, is posted to this Section from the Health Visiting and Administration Sections on a full-time basis. The services of Part-time Medical Officers, appointed to a panel, are employed on a sessional basis.		
(a) <u>Indian</u>		
Nurse	2	Ø Anthony, A. (from 2.3.64) Ø Baboo, C. (from 2.3.64)
Health Assistant (Grade I)	1	
Health Assistant (Grade II)	3	
(b) <u>Bantu</u>		
Nurse	2	Putini, D. Ø Ntaka, E.
Health Assistant (Grade II)	4	Ø Denotes Midwifery Certificate
<u>FAMILY HEALTH (CHILD HYGIENE) SERVICE</u>		
Senior Clinical Medical Officer	1	Dr. H.A.B. Pletts, M.B., B.Ch.
Clinical Medical Officer	1	Appointee assumes duty in January 1965.
Part-time Clinical Medical Officer	4	Dr. M.J. Broderick, L.R.C.P.(S) Dr. E.K. McDonald, M.B., Ch.B. Dr. M. Clifford, (from 6.5.64 to 30.10.64) Dr. M.K. McAllum, M.B., Ch.B. (resigned 28.2.64) Dr. A.M. Moller (from 10.2.64 to 5.3.64) Dr. M. Ness (from 16.3.64) 1 Vacancy
Part-time Medical Specialist	1	Dr. L. Raftery, F.R.C.O.G., M.M.S.A., M.R.C.S., L.R.C.P.
<u>EXFOLIATIVE CYTOLOGY (Prevention of Uterine Cancer)</u>		
(a) <u>European</u>		
Municipal Consultant	1	Professor Derk Crichton, M.B., Ch.B., D. Phil., F.R.C.S., F.R.C.O.G.
Part-time Laboratory Technician	1	
(b) <u>Indian</u>		
Health Assistant (Grade II)	1	

Section and Position	No.	Incumbent/Remarks
<u>MATERNAL AND FAMILY WELFARE</u>		
(a) <u>European</u>		
Part-time Clinical Medical Officer	1	Dr. H. Maisel, M.B., B.Ch., B.Sc., (resigned 15.1.64) Dr. M. Ness (from 5.2.64 to 15.3.64) Dr. A.M. Moller (from 16.3.64)
(b) <u>Indian</u>		
Nurse	1	Thrapshay, G.
<u>HEALTH EDUCATION</u>		
(a) <u>European</u>		
Health Educator	1	Goddard, Miss E.
Technician	1	Godfrey, D.M.
General Assistant	2	
(b) <u>Coloured</u>		
Lecturer	1	
(c) <u>Indian</u>		
Lecturer	1	
Junior Lecturer	3	
(d) <u>Bantu</u>		
Lecturer	2	
Assistant Lecturer	1	
Junior Lecturer	4	
<u>NON-EUROPEAN HEALTH AND MEDICAL SERVICES</u>		
<u>Venereal Diseases Clinics</u>		
(a) <u>European</u>		
Senior Clinical Medical Officer (City Venereologist)	1	Dr. A.A. Wailer, M.R.C.S., L.R.C.P.
Clinical Medical Officer	1	Dr. M. McAuliffe, L.A.H., L.R.C.P.S.I. (resigned 31.7.64) Dr. J.H. Meiring (from 26.10.64)
(b) <u>Bantu</u>		
Medical Officer	1	Dr. C.N. Dhlamini, L.R.C.P., L.R.C.S., L.R.F.P.S.
Nurse	4	Cele, M. Emerson, R. Ø Mangole, B. Ø Nxumalo, V.
Health Assistant (Grade I)	2	
Health Assistant (Grade II)	7	
Interpreter/Cleaner (Bantu)	1	
		Ø Denotes Midwifery Certificate

Section and Position	No.	Incumbent/Remarks
<u>MEDICAL BUREAU</u>		
Senior Clinical Medical Officer	1	Dr. M. Casson, M.D., M.R.C.S., L.R.C.P.
<u>Total Staff Establishment</u>		
European	201	(includes 1 unestablished and 8 part-time appointments)
Non-European	259	
	460	
Supernumerary Labourers (Indian)	5	
	465	

FINANCIAL SUMMARY

An abbreviated schedule of the actual cost of the services undertaken by the City Health Department for the financial year ended 31st July 1964, is shown below :-

Expenditure

	1963/64	1962/63
Salaries, Wages and Allowances	R574,492	R526,637
Drugs and Medical Requisites	15,626	17,111
Tuberculosis Hospitalisation -		
(Government Hospitals - net cost)	39,617	41,768
(Other " - gross cost)	161,576	163,798
Hospitalisation Infectious Diseases and Venereal Diseases	31,708	53,223
Transport and Subsidised Locomotion	43,975	43,080
Miscellaneous, including Rents, Insurance, Telephones, Stationery, etc.	162,222	128,036
	<u>1,029,216</u>	<u>973,653</u>

Income

General, including				
hospital fees recovered	32,308	35,214		
Government Refunds under				
Public Health Act	345,908	358,566		
Health Services debited				
to Bantu Hostels				
and Locations	93,012	99,315		
			<u>471,228</u>	<u>493,095</u>
			<u>Nett Cost:</u>	<u>557,988</u>
				<u>480,558</u>

Capital expenditure is not included in the above schedule.

R E P O R T 'B'

HOUSING

1. POPULATION

The estimated population of Durban as at 31st December 1964, was as follows :-

(a)	Europeans	175,404	27.28%
(b)	Coloureds	28,160	4.38%
(c)	Indians	243,955	37.95%
(d)	Bantu	<u>195,359</u>	<u>30.39%</u>
		<u>642,878</u>	

2. EUROPEAN HOUSING

The housing shortage which existed at the end of 1963, for this section of the community, continued during the current year and with the possible exception of the needs of the high income group, the shortfall was constant throughout the year. At the beginning of 1964 large scale building operations involving flats were in progress. A number of these projects were completed during the year. Buildings designed on luxury standards were soon occupied by those persons who could afford this type of accommodation, however, as the year progressed, persons requiring this type of accommodation became more and more selective. By the end of the year the State was considering measures to control this type of development so that the best use could be made of available building material and labour, both of which were in short supply.

The position in regard to the middle income group showed little change, the demand for both flats and houses having been fairly constant throughout the year. This point is illustrated by details supplied by the Housing Section of the City Treasurer's Department. The number of housing applications on hand as at the 31st December 1964, were :-

Purchasing Schemes	1,293
Letting Schemes	1,341

The above figures cannot be regarded as the total number of European families requiring accommodation in the City as they represent only the applications made in respect of Municipal housing schemes, and do not take into consideration applications made to the Department of Community Development, various Estate Agents, etc. It is, however, conceded that some families may have been recorded as applicants on one or several of any letting agency, in order to obtain suitable accommodation. From the above it will be appreciated that it is very difficult indeed to estimate how many dwelling units are required at any one time in order to meet the demand. None the less it is apparent that there is an ever growing demand for accommodation.

This demand is particularly applicable to the lower income group. Generally speaking their housing needs have become more acute each year especially as old buildings with low rentals are demolished in order to make way for new developments. Nearly all estate agents in the City have large waiting lists for rent controlled accommodation, and until such time as large scale inexpensive housing is undertaken, either by the State or the Council, the plight of this section will remain.

It is impossible to forecast when the housing shortage will be met and a happy balance struck between supply and demand. Firstly, consideration must be given to the natural growth of population, the present figure of 175,404 represents an increase of 3,096 persons as compared with 1963 and each year this figure will become progressively larger. Secondly, attention must be given to the influx of persons brought about by industry and commerce as distinct from immigration. Thirdly, the question of immigration is a problem on its own. In order to assess the influence of immigration on the housing position, the Department of Immigration was requested to provide information as to the number of immigrants who had settled and were housed in the City. Unfortunately this information was not available, as after reception and initial placement in employment, the Department seldom heard from immigrants again. However, it is known that the influx of immigrants has materially affected the housing position in the City, so much so that the City Council prepared building plans for blocks of flats especially to house immigrant families. Construction work on this project has not commenced as yet.

In response to suggestions made by the State, the City Council gave consideration to the approval of timber as a permanent building material for houses, the purpose being to use South African produced building material and so to reduce building costs. In considering this matter, the following factors were taken into account:-

- (1) Rodent and vermin proof qualities; it was strongly felt that material with a hollow core would favour infestation by rodents and other vermin such as cockroaches and bugs;
- (2) Resistance to attack by termites;
- (3) Sound proof qualities;
- (4) Thermal insulation;
- (5) Resistance to impact;
- (6) Weather proof qualities;
- (7) Satisfactory resistance to fire;
- (8) Durability in the light of extreme weather conditions;
- (9) Extent of regular maintenance which may be necessary.

Arising from the above, certain standards were laid down by Council Resolution which permitted timber dwellings being built in the incorporated areas of the City. At one stage it was thought that by allowing timber dwellings there might be an effect in reducing the housing shortage. Very few persons, however, have made use of this form of construction in Durban.

It is of interest to note that during the current year, the City Council was responsible for the construction of 94 houses for Europeans, and the Department of Community Development had commenced a building project which comprised three blocks of residential flats, which on completion will provide 71 dwelling units. These flats are expected to be completed early in 1965. In addition the same Department had acquired the necessary building sites for a further 177 flats and 210 houses. It is anticipated that building operations on these projects will commence early in 1965.

3. COLOURED HOUSING

The Coloured community represents 4.38% of the estimated population of the City and this figure reflects a very slight increase as compared with 1963. In terms of Group Areas Proclamation, the areas which have been zoned for Coloured occupation are situated at Greenwood Park/Red Hill, Sparks Estate and Merebank/Wentworth. Two of these areas are already well developed as regards dwellings.

When Merebank/Wentworth is fully developed, the Coloured areas may well have approached saturation point, and consideration will need to be given to extending the areas zoned for Coloured occupation.

The housing position for the Coloured community remains extremely acute. The City Council, appreciative of their needs, has prepared plans for additional housing. It is regrettable, however, that very little progress has been made beyond the planning stage, as the proposals have not received the final approval of the National Housing Commission for various reasons.

According to information provided by the City Treasurer, the number of Coloured housing applications as at the 31st December, 1964, was as follows :-

Purchasing Schemes	1,169
Letting Schemes	486

These applications represent increases of 323 and 111 respectively as compared with 1963, thus supporting the view that there is an ever growing demand for Coloured housing.

Privately promoted housing development for Coloureds has been negligible. On the other hand the City Council granted 12 loans in respect of selling schemes for private individuals. It is also pleasing to record that the Department of Community Development has embarked on a scheme for 1,250 houses in the Coloured area at Wentworth.

4. INDIAN HOUSING

The Indian community remains the largest single race group within the City. It comprises 37.95% of the total of the estimated population and this group increased by 6,576 persons, which incidentally was the largest increase of any of the race groups. Private development has continued at a steady pace in those areas which have been set aside and zoned for Indian occupation. Building plans for 305 houses and 17 blocks of flats comprising 345 dwelling units were approved by the City Council during the year.

The City Council has continued to play a major role in providing suitable housing facilities for this section of the community and has concentrated its efforts at Chatsworth. This Indian Township when completed will comprise ten neighbourhood units and a large township centre. The latter centre is approximately 150 acres in extent and a private town planning consultant has been engaged to plan a model Township Centre with modern State and Municipal buildings interspersed with private undertaking. At the time of writing it is anticipated that Chatsworth will contain housing units to the order of 17,500. It is possible that this figure will be increased. One of the neighbourhood units in the township has been set aside for development by loans to individuals, and at the end of the year eight building plans for dwellings had been submitted for Council approval. Each neighbourhood unit is planned with a unit centre which is intended to be used for trading facilities and other amenities. Three private townships adjoin Chatsworth: Umhlathuzana, Kharwastan and Silver Glen. The Department of Community Development has indicated its intentions to embark on a housing scheme consisting of 200 houses in Silver Glen. The lack of essential services in the area, however, has delayed development. The total development of Chatsworth is expected to be completed early in 1968. It is very pleasing to record that at the end of 1964, a total of 5,327 dwelling units had been completed and included single storey units, semi-detached, double-storey semi-detached and flat units.

The demand for Indian housing is clearly indicated by the applications which the City Treasurer had received up to the 31st December, 1964, namely :-

Purchasing Schemes	5,847
Letting Schemes	2,126

5. HOUSING UNITS COMPLETED DURING 1964

Tabulated hereunder is a schedule reflecting the units of accommodation for the various racial groups completed under the City Council's housing schemes during the 1964 calendar year.

Race Group	Loan/Selling Scheme	C h a t s w o r t h	
		Sub-Economic Letting	Economic Letting option to purchase
European	94	-	-
Coloured	12	-	-
Indian	83	708	1,581
Total	189	708	1,581

Grand Total: 2,478 units of accommodation.

6. BANTU HOUSING

The Durban City Council on behalf of the South African Native Trust continued to develop the Umlazi Mission Township which is situated to the South and without the City boundary. The development has been planned in two phases, each comprising 10,000 houses together with the necessary trading, educational and recreational amenities. In the Northern section of the City, the development of kwaMashu Bantu Township continued. During the year under review a further 906 four-roomed houses, 128 two-roomed houses and hostel accommodation containing 896 beds were completed. Temporary accommodation in the form of 66 serviced sites and 75 block houses, was eliminated. Three better type houses were also built in the township and further amenities provided simultaneously with housing development. These projects ranged from shops to halls and churches, offices and sports pavilions, etc. The estimated total population of kwaMashu as at the end of the year was 95,000 and the housing position was :-

4-roomed houses	7,744
2-roomed houses	2,593
Wooden huts	2,502
Better type houses	19

thus giving a total of 12,858 housing units and hostel accommodation comprising 12,624 beds. The bulk of the families housed in the township originally occupied shacks in the Cato Manor Emergency Camp.

CATO MANOR EMERGENCY CAMP

This year was marked by the complete elimination, on the 31st August, of the Cato Manor Slum Area.

It is perhaps appropriate now to look back on the history, from a public health aspect alone, of this slum area which gained notoriety of enormous proportions for reasons mainly unrelated to public health. To this end a separate appendix (C) is included.

Summary of Bantu Housing

<u>Location/Township</u>	<u>No. of Houses</u>	<u>Estimated Population</u>
1. Chesterville	1,265	9,300
2. Lamont (Sub-economic)	1,911)	
3. Lamont Extension (Economic)	851)	20,700
4. Umlazi Glebe	748	5,000
5. kwaMashu	12,858	82,376
	<u>17,633</u>	<u>117,376</u>

Hostels/Dormitories

1. Dalton Road	- Males	1,721 beds
2. Grey Street	- Females	687 "
3. Jacobs	- Females	32 "
4. Jacobs	- Males	828 "
5. S.J. Smith	- Males	4,602 "
6. kwaMashu	- Males	12,624 "
		<u>20,494</u>

The estimated total number of Bantu housed by this Municipality was therefore 137,870.

A summary of essential information in respect of locations, forms an appendix to this report.

7. CONTROL OF PREMISES (SLUMS) IN DEFINED ZONES

This phase of the Department's activities has of necessity been limited, the governing factor being the availability of alternative housing for the various racial groups. Normal urban renewal has continued to dispose of a percentage of slum housing. This feature, together with the amendment to the Slums Act, has resulted in serious consideration being given to the deproclamation of the existing Slum Zones. With the amendment of the Slums Act and the formation of the newly constituted Slums Clearance Court, there will be suitable and adequate machinery to deal with the slum properties that exist both in and out of the Slum Zones.

8. BUILDING PLANS

A total of 3,641 building plans were submitted to this Department for examination during the year. The total cost of the buildings involved was assessed at R40,118,200. In comparison with the year 1963, this represented an increase of 260 plans and an increase of R12,471,167 in cost. The Department's role in examining plans is to ensure compliance with the various By-laws and requirements of the Department embodied in codes of practice.

The types of structures are detailed overleaf :-

Type of Structure	No. of Units	No. of Plans	Estimated Cost
<u>Private Dwellings</u>			
1 and 2 rooms	-	-	
3 rooms	22		
4 rooms	82		
5 rooms	505		
6 rooms and over	139		
Dwellings	748	748	R4,841,196
<u>Flats</u>			
1 room	327		
2 rooms	985		
3 rooms	954		
4 rooms and over	656		
Total	2,922	87	R15,274,602
Other residential Buildings		6	R1,035,660
Additions to residential		1,873	R1,664,996
Industrial and Commercial Buildings		76	R9,117,538
Other new Buildings		10	R122,400
Additions to Non-residential Buildings		756	R5,839,938
New Municipal and State Buildings		17	R1,676,484
Additions to Municipal and State Buildings		68	R545,386
Total No. of Units	3,670		
Total No. of Plans		3,641	
Total Estimated Cost			R40,118,200

SUMMARY OF ESSENTIAL INFORMATION RELATIVE TO LOCATIONS ETC.

Location or Township	Year Completed	Houses		Water Supply	Sanitation	Ablutions	Remarks
		Economic	Sub-economic				
Chesterville	1946	-	1,265	Individually piped	Water-borne	Showers to each house	Mother and Baby Clinic twice per week
Lamont	Virtually completed	-	1,911	-do-	-do-	(Showers to each house plus (178 communal (washing (gullies	Mother and Baby Clinic daily
Lamont Extension	-do-	851	-	-do-	-do-		
Umlazi Glebe	-do-	10	738	Communal Stand-pipes	Pit and Aqua privies	Communal shower houses	Mother and Baby Clinic twice per week
kwaMashu	Still being developed	12,858	-	Piped individually	Water-borne	Showers to each house	Mother and Baby Clinic daily. Two clinics established.

Chesterville Location is provided throughout with electrical power as are all hostels and dormitories. Electrical power is available in all other locations and townships but not many residents have taken advantage of this amenity. The Clinics are conducted by the City Health Department.

CAUSES OF DEATH

(Classified according to International List of 150 Causes from Sixth Revision, World Health Organisation, 1948)

Ref.	Cause of Death	Detailed List Numbers	European			Coloured			Bantu			Asiatic			Totals		
			M.	F.	Total	1963	M.	F.	Total	1963	M.	F.	Total	1963	M.	F.	Total
A 1	Tuberculosis of Respiratory System	001-008	5	3	8	14	7	1	8	7	66	33	99	128	15	7	22
A 2	Tuberculosis of Meninges and Central Nervous System	010									4	7	11	8	3	8	11
A 3	Tuberculosis of Intestines, Peritoneum and Mesenteric Glands	011									1		1			2	2
A 4	Tuberculosis of Bones and Joints	012, 013										4	4	3			
A 5	Tuberculosis, All other forms	014-019	1		1						13	9	22	15			
A 6	Congenital Syphilis	020										1	1	3			
A 12	Typhoid Fever	040									2	1	3	1			
A 16	Dysentery, All Forms	045-048		1	1	1	1	1	2	4	16	17	33	42	8	4	12
A 20	Septicaemia and Pyaemia	053	2	1	3	1					2	2	4		2	1	3
A 21	Diphtheria	055									2		2	1	4	1	5
A 22	Whooping Cough	056									1	1	2	4			
A 23	Meningococcal Infections	057											1		2		2
A 26	Tetanus	061									5	3	8	10	2	1	3
A 28	Acute Poliomyelitis	080												1			
A 29	Acute Infectious Encephalitis	082	1		1	2					1		1	2	1	1	2
A 32	Measles	085	1	1	2		1	1	2	1	29	23	52	56	16	10	26
A 34	Infectious Hepatitis	092	1		1	2					1	2	3	4		2	2
A 38	Schistosomiasis	123												1			
A 42	Other Diseases due to Helminths	124, 126, 128, 130															
A 43	All Other Diseases Classified as Infective or Parasitic	036-039, 049, 054, 059, 063-074 086-090, 093, 095, 096, 120-122 131-138				1											
A 44	Malignant Neoplasm of Buccal Cavity and Pharynx	140-148	12	2	14	11	1		1		2		2		1	1	2
A 45	Malignant Neoplasm of Oesophagus	150	2	1	3	6	3		3	3	14	2	16	21	1	2	3
A 46	Malignant Neoplasm of Stomach	151	14	8	22	24	2		2	3	6	2	8	3	7	5	12

Ref.	Cause of Death	Detailed List Numbers	European				Coloured				Bantu				Asiatic				Total			
			M.	F.	Total	1963	M.	F.	Total	1963	M.	F.	Total	1963	M.	F.	Total	1963	M.	F.	Total	1963
A 47	Malignant Neoplasm of Intestine, Except Rectum	152, 153	3	18	21	22				1		1				1			4	21	25	32
A 48	Malignant Neoplasm of Rectum	154		1	1	12	1		1	1					2			7	4	1	5	20
A 49	Malignant Neoplasm of Larynx	161	1		1	3	1		1	1	2							3	4		4	7
A 50	Malignant Neoplasm of Trachea, and of Bronchus and Lung, not specified as secondary	162, 163	53	11	64	60	1			1					3							
A 51	Malignant Neoplasm of Breast	170		31	31	23		2	1		6	3	9	12				11	63	16	79	84
A 52	Malignant Neoplasm of Cervix Uteri	171		11	11	1		5	5	2		8	8	8		6		7		30	30	18
A 53	Malignant Neoplasm of Other and Unspecified Parts of Uterus	172-174		5	5	3						2	2	2		4		6		11	11	11
A 54	Malignant Neoplasm of Prostate	177	6		6	15				1	4		4	2				4	10		10	22
A 55	Malignant Neoplasm of Skin	190, 191	1	1	2	9		1	1										1	2	3	10
A 56	Malignant Neoplasm of Bone and Connective Tissue	196, 197	3	2	5	2								4	1				4	2	6	7
A 57	Malignant Neoplasm of all Other and Unspecified Sites	155-160, 164, 165, 175, 176, 178-181, 192-195, 198, 199	29	25	54	67		1	1	4	21	4	25	30	9	7	16	18	59	37	96	119
A 58	Leukaemia and Aleukaemia	204	8	1	9	3				1	1	2	3	1	5	1	6	7	14	4	18	12
A 59	Lymphosarcoma and Other Neoplasms of Lymphatic and Haematopoietic System	200-203, 205	5	7	12	10					1	1	2	6	1	2	3	1	7	10	17	17
A 60	Benign Neoplasms and Neoplasms of Unspecified Nature	210-239		4	4	6		1	1	1	1	1	2	2	3			6	4	6	10	15
A 63	Diabetes Mellitis	260	4	7	11	16		2	2	1	7	5	12	8	11	16	27	16	22	30	52	41
A 64	Avitaminosis and Other Deficiency States	280-286						1	1	2	39	25	64	92	1	3	4	4	40	29	69	98
A 65	Anaemias	290-293	1	2	3	3				2	2	1	3		1	2	3	6	4	5	9	11
A 66	Allergic Disorders: All Other Endocrine, Metabolic and Blood Diseases	240-245, 253, 254, 270-277, 287-289, 294-299	5	12	17	15	1	1	2	3	2		2	15	20	15	35	1	28	28	56	34
A 68	Psychoneuroses and Disorders of Personality	310-324, 326		1	1	1								1						1	1	2
A 70	Vascular Lesions Affecting Central Nervous System	330-334	76	108	184	191	8	4	12	13	43	27	70	61	86	87	173	152	213	226	439	417
A 71	Nonmeningococcal Meningitis	340	2	1	3	1		1	1		17	11	28	19	7	9	16	9	26	22	48	29
A 73	Epilepsy	353	1		1		1		1		1	2	3		3	1	4	5	6	3	9	5
A 77	Otitis Media and Mastoiditis	391-393					1		1					2					1		1	2

Ref.	Cause of Death	Detailed List Numbers	European				Coloured				Bantu				Asiatic				Total			
			M.	F.	Total	1963	M.	F.	Total	1963	M.	F.	Total	1963	M.	F.	Total	1963	M.	F.	Total	1963
A 110	Infections of Kidney	600	2	8	10	13	1		1	4	6	6	12	17	2	3	5	7	11	17	28	41
A 111	Calculi of Urinary System	602, 604								1												1
A 112	Hyperplasia of Prostate	610	2		2	5	1		1	1									3		3	7
A 114	Other Disease of Genito-Urinary System	601, 603, 605-609, 611-617, 622-637	1		1	6					1	2	3	1	2	1	3		4	3	7	7
A 115	Sepsis of Pregnancy, Childbirth and the Puerperium	640, 641, 681, 682, 684										1	1					1		1		1
A 116	Toxaemias of Pregnancy and the Puerperium	642, 652, 685, 686										1	1							1		1
A 117	Haemorrhage of Pregnancy and Childbirth	643, 644, 670-672										3	3	2		1	1	3		1		5
A 118	Abortion without mention of Sepsis or Toxaemia	650										3	3	2		1	1	3		3		5
A 119	Abortion with Sepsis	651		1	1					11		3	3			1	1	4		5		15
A 120	Other Complications of Pregnancy, Childbirth and the Puerperium	645-649, 673-680, 683, 687-689								2		1	1	2		1	1			2		2
A 121	Infections of Skin and Subcutaneous Tissue	690-698	1		1					1	1	2	3	1		2	2	1	2	2	4	2
A 122	Arthritis and Spondylitis	720-725										1	1				2		2	1	3	
A 126	All Other Diseases of Skin and Musculoskeletal System	700-716, 731-736			2	1					1	1	2	1			1		1	4	5	3
A 127	Spina Bifida and Meningocele	738-744									1		1	2					1		1	2
A 128	Congenital Malformations of Circulatory System	751																				
A 129	All Other Congenital Malformations	754	2	2	4	4	1	1	2	2	3	5	8	9	8	6	14	10	14	14	28	25
A 130	Birth Injuries	750, 752, 753, 755-759	7	4	11	6				3	6	2	8	11	5	5	10	15	18	11	29	35
A 131	Postnatal Asphyxia and Atelectasis	760, 761	6	3	9	3	1	1	2	1	11	9	20	30	9	7	16	20	27	20	47	54
A 132	Infections of the Newborn	762	2	2	4	12		3	3	2	12	9	21	40	10	7	17	10	24	21	45	64
A 133	Haemolytic Disease of the Newborn	763-768	2	1	3	2	3	1	4	4	21	23	44	50	25	21	46	46	51	46	97	102
A 134	All Other Defined Diseases of Early Infancy	770		1	1	1					2	2	2	1				1	2	1	3	3
A 135	Ill-defined Disease Peculiar to Early Infancy and Immaturity Unqualified	769, 771, 772		1	1	1	1		1		13	7	20	19	4	4	8	6	18	12	30	26
A 136	Senility Without Mention of Psychosis	773-776	17	17	34	38	7	12	19	16	93	73	166	190	52	45	97	117	169	147	316	361
A 137	Ill-defined and Unknown Causes of Morbidity and Mortality	794	7	14	21	14		1	1	2	2	2	4	6	5	2	7	5	14	19	33	27
		780-793, 795	37	54	91	84	14	16	30	26	296	257	553	343	61	39	100	85	408	366	774	538

Ref.	Cause of Death	Detailed List Numbers	European				Coloured				Bantu				Asiatic				Total			
			M.	F.	Total	1963	M.	F.	Total	1963	M.	F.	Total	1963	M.	F.	Total	1963	M.	F.	Total	1963
AE 138	Motor Vehicle Accidents	E810-E835	35	12	47	23	9	2	11	12	53	11	64	52	17	9	26	37	114	34	148	124
AE 139	Other Transport Accidents	E800-E802, E840-E866	5		5	2				2	16		16		1		1	2	22		22	6
AE 140	Accidental Poisoning	E870-E895				1						2	2	3	1		1		1	2	3	4
AE 141	Accidental Falls	E900-E904	4	2	6	7	1		1		10		10	5	2	1	3	3	17	3	20	15
AE 142	Accident Caused by Machinery	E912				1					1		1						1		1	1
AE 143	Accident Caused by Fire and Explosion of Combustible Material	E916		1	1					1		4	4	4		9	9	8		14	14	13
AE 144	Accident Caused by Hot Substance, Corrosive Liquid, Steam and Radiation	E917, E918					1		1	1	2	2	4	10	1	3	4	8	4	5	9	19
AE 145	Accident Caused by Firearm	E919									1		1						1		1	
AE 146	Accidental Drowning and Submersion	E929	5	2	7			1	1	2	8	4	12	5	14	1	15	12	27	8	35	19
AE 147	All Other Accidental Causes	E910, E911, E913-E915, E920-E928, E930-E965 E970-E979					2		2	3	23	4	27	50	15	5	20	26	44	11	55	86
AE 148	Suicide and Self-Inflicted Injury		19	9	28	34	2	3	5	7	6	3	9	13	4	2	6	15	31	17	48	69
AE 149	Homicide and Injury Purposely Inflicted by Other Persons (Not in War)	E980-E985	2	3	5	16	3		3	5	37	4	41	71	5		5	19	47	7	54	111
	TOTALS		944	795	1739	1689	133	109	242	233	1335	965	2300	2304	1019	762	1781	1747	3431	2631	6062	5973
	CRUDE DEATH RATES		9.91 (9.80)				8.59 (8.53)				11.77 (11.97)				7.30 (7.36)				9.43 (9.49)			

(Classified according to International Intermediate List of 150 Causes from Sixth Revision, World Health Organisation, 1948)

Ref.	Cause of Death	Detailed List Numbers	European			Coloured			Bantu			Asiatic			Totals		
			M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total
A 1	Tuberculosis of Respiratory System	001-008							1	5	6				1	5	6
A 2	Tuberculosis of Meninges and Central Nervous System	010								1	1		1	1		2	2
A 5	Tuberculosis, All Other forms	014-019							4		4				4		4
A 6	Congenital Syphilis	020								1	1					1	1
A 16	Dysentery, All Forms	045-048							2	3	5			2	3	4	7
A 20	Septicaemia and Pyaemia	053						1		1	1				1	1	1
A 21	Diphtheria	055							1		1				1		1
A 22	Whooping Cough	056								1	1					1	1
A 23	Meningococcal Infections	057								1	1			1	1	1	2
A 26	Tetanus	061							5	3	8			2	6	4	10
A 28	Acute Poliomyelitis	080															
A 32	Measles	085	1		1		1	1	8	10	18		3	5	10	15	25
A 43	All Other Disease Classified as infective or Parasitic	036-039, 049, 054, 059, 063-074 086-090, 093, 095, 096, 120-122 131-138, 155-160, 164, 165, 175, 176, 178-181, 192-195, 198, 199															
A 57	Malignant Neoplasm of All Other and Unspecified Sites	204												1		1	1
A 58	Leukaemia and Aleukaemia	280-286															
A 64	Avitaminosis and Other Deficiency States	290-293							8	8	16			1	8	9	17
A 65	Anaemias	240-245, 253; 254, 270-277, 287-289, 294-299								1	1					1	1
A 66	Allergic Disorders: All Other Endocrine, Metabolic and Blood Diseases		1		1												
A 70	Vascular Lesions Affecting Central Nervous System	330-334															
A 71	Nonmeningococcal Meningitis	340								2	2					2	2
A 73	Epilepsy	353							10	5	15			8	13	11	24
A 77	Otitis Media and Mastoiditis	391-393													3		3
															1		1

Ref.	Cause of Death	Detailed List Numbers	European				Coloured				Bantu				Asiatic				Total			
			M.	F.	Total	1963	M.	F.	Total	1963	M.	F.	Total	1963	M.	F.	Total	1963	M.	F.	Total	1963
A 130	Birth Injuries	760, 761	6	3	9	3	1	1	2	1	11	9	20	30	9	7	16	20	27	20	47	54
A 131	Postnatal Asphyxia and Atelectasis	762	2	2	4	12		3	3	2	12	9	21	40	10	7	17	10	24	21	45	64
A 132	Infections of the Newborn	763-768	2	1	3	2	3	1	4	4	21	23	44	50	25	21	46	45	51	46	97	101
A 133	Haemolytic Disease of the Newborn	770		1	1	1					2	2	2	1			1	1	2	1	3	3
A 134	All Other Defined Diseases of Early Infancy	769, 771, 772		1	1	1	1		1		13	7	20	19	4	4	8	5	18	12	30	25
A 135	III-defined Diseases Peculiar to Early Infancy and Immaturity Unqualified	773-776	17	17	34	38	7	12	19	16	93	73	166	190	52	45	97	117	169	147	316	361
A 137	III-defined and Unknown Causes of Morbidity and Mortality	780-793, 795									122	110	232	139	12	10	22	12	135	125	260	158
AE 140	Accidental Poisoning	E870-E895				1	1		4	6												1
AE 141	Accidental Falls	E900-E904				1					1		1		1				1		1	
AE 144	Accident Caused by Hot Substance, Corrosive Liquid, Steam and Radiation	E917, E918												1								1
AE 147	All Other Accidental Causes	E910, E911, E913-E915, E920-E928, E930-E965		1	1										1	1	2	1	1	2	3	1
AE 149	Homicide and Injury Purposely Inflicted by Other Persons (Not in War)	E980-E985												1				1				2
TOTALS			41	39	80	82	22	36	58	60	506	424	930	950	236	199	435	424	805	698	1503	1516
INFANT MORTALITY RATES: (Deaths of Infants Under 1 Year per 1,000 Live Births)			24.64 (24.31)				44.48 (47.43)				104.60 (108.63)				54.50 (53.90)				69.99 (71.34)			

CATO MANOR

Shack building was first discovered early in 1941 when a "village" comprising some 40 - 50 shacks, occupied by nearly 300 Bantu, was found in a secluded valley.

By 1943, the growth of shack development in the Booth Road area had accelerated to the stage where approximately 5,000 Bantu were living under most unhygienic conditions in over 700 shanties. Several Bantu in the area were found to be suffering from smallpox and this led to intensive control measures involving "cordon" vaccination at Cato Manor, the local focus of infection of cases imported from Vryheid, and the setting up of public vaccination centres throughout the City and suburbs.

The following year saw an increase to 3,000 shacks occupied by over 17,000 Bantu. In an attempt to ensure the maintenance of "basic" sanitation on the privately-owned land the Council decided that owners should provide municipal water and sanitary conveniences for the use of the squatters regardless of their rights of occupation. Public Health notices were served, prosecutions instituted for non-compliance, and there were several "test" cases. In due course the Supreme Court's judgement was favourable to the Council and the Department thereafter pursued an active programme of dealing with offending land owners. In 1947, 59 cases of typhoid fever occurred in Cato Manor of which over half were living in one area which was notorious for its defective sanitary environment. These shack residents were in regular employment in the Old Borough, where quite a number of males and females were food-handlers. Cato Manor had also become a favourite weekend resort for many Durban Bantu, thus the threat to the health of the City was of major proportions.

The City Health Department was actively engaged in various measures to keep the sanitation situation in hand. Owners were required to provide basic facilities on penalty of prosecution but due to topographical features and the absence of suitable access roads, municipal sanitary services were not available other than at certain central points. Accordingly, no means were available for the removal of refuse and the area could not be provided with a nightsoil service. The Department was therefore compelled to take a hand by spraying with insecticides the vast accumulation of domestic-type refuse and the large number of overflowing pit privies in an attempt to control fly development. The number of water points was limited and the soil unsuitable for soakage. Most traders, including those engaged in the preparation and sale of perishable food, were doing business in shacks completely lacking in hygiene.

By 1951 there were 6,000 multi-roomed shacks with a conservatively estimated population of 60,000 Bantu. The incidence of typhoid fever and gastro-enteritis was high, and the situation was highly dangerous from the public health viewpoint. It had been held that the local authority lacked the necessary legal machinery to prevent shack building and could not move in to demolish illegally erected structures. Furthermore the inhabitants were truculent and difficult to manage, and this highly explosive situation in no way facilitated municipal servicing or control. This year, however, saw the advent of two new legal instruments which had a very material bearing on the limitation of the continued expansion of the Cato Manor shack area. Firstly, the City Council acquired powers under Ordinance 21 of 1949 authorising the demolition of shacks being erected or which were vacant, and those even occupied if suitable alternative accommodation was

offered. Secondly, the Prevention of Illegal Squatting Act, No. 52 of 1951, was applied to the Magisterial area of Durban to provide for -

- (a) the prevention and control of illegal squatting on public or private land; and
- (b) the establishment of emergency camps by local authorities.

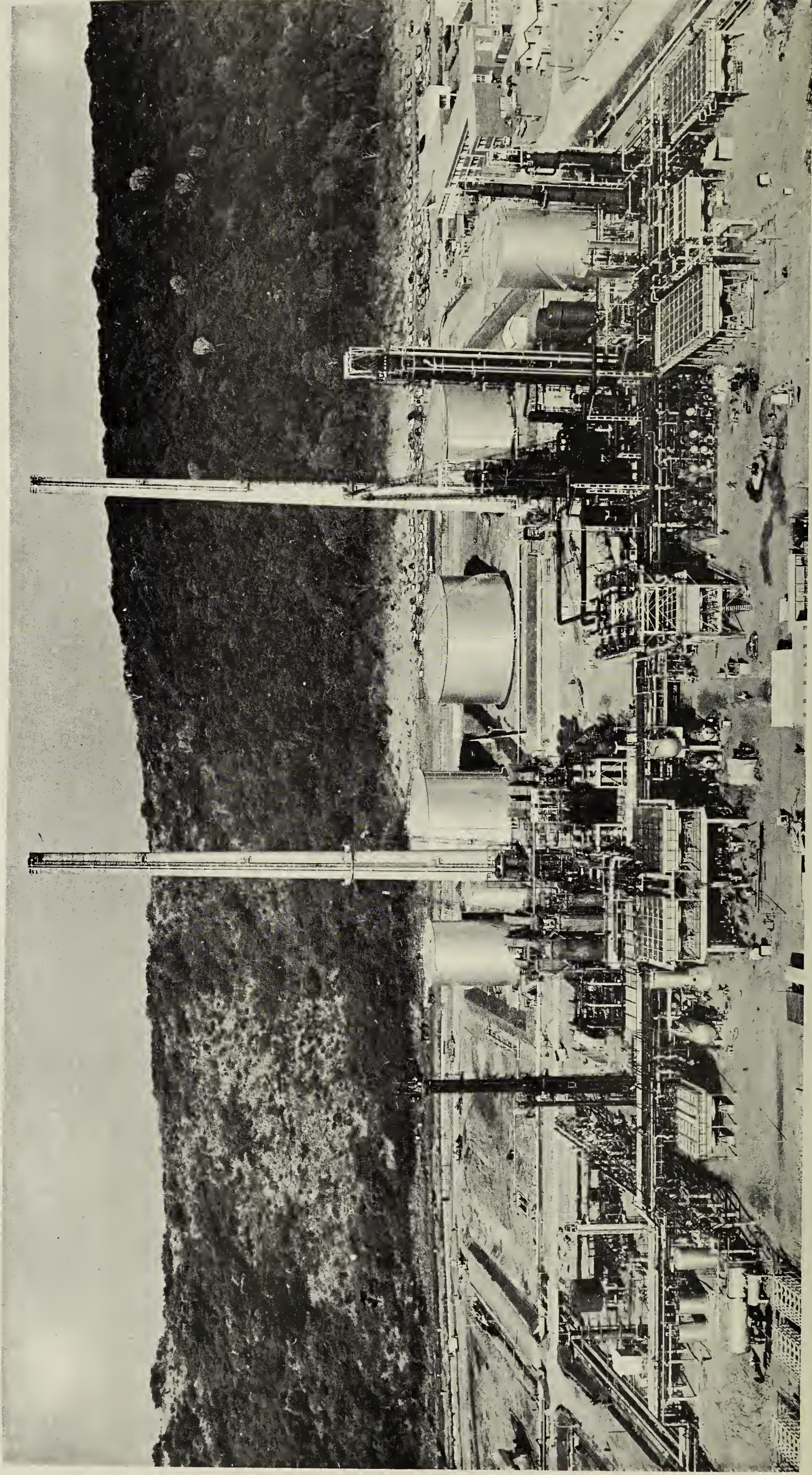
The following year saw a slight improvement in the sanitation picture following the expropriation of much of the land in the area and the commencement by the City Council thereon of the Emergency Bantu Housing Scheme. New roads were made for greater access, sites were terraced, a number of sanitary/ablution blocks on water-borne sewerage were provided and suitable trading premises erected. There remained a large number of shacks in areas outside the perimeter of the camp. The number of cases of typhoid fever and gastro-enteritis remained high in the population which had by now grown to over 75,000 although the establishment of various clinics and a mobile therapeutic unit for tuberculosis had tended to improve the general health standard. Nevertheless, despite the provision of certain basic sanitary facilities the environmental shortcomings affecting public health fell well below a safe level in the shack areas surrounding the Emergency Camp and also within the controlled area itself. In fact the typhoid fever incidence in the late 1950's gave cause for grave concern. During 1958, cases of typhoid fever notified to the Department in respect of residents of the Camp and neighbouring shack areas totalled 200, and the following year (1959) the figure rose to 229. In both years the majority of cases came from the Emergency Camp. This high incidence was probably due to the fact that irresponsible persons interfered with the sewerage reticulation to the communal facilities resulting in spillages and the more law abiding were frightened to leave their abodes after dark resulting in local fouling.

Experience gained at Cato Manor had more than amply demonstrated that with regard to large scale Bantu housing projects the cardinal public health necessities were a safe water supply and water-borne sanitation on a site basis. Improvement in the health state had been achieved initially by the provision of a Corporation water supply, and a further advance was gained from the introduction of communal sanitary blocks in the Emergency Camp. But the incidence of typhoid fever proved beyond doubt that it was essential for individual dwellings to be provided with water-borne sanitation reticulated by the local authority.

In 1957 development works commenced at kwaMashu. Originally, in 1943, it had been proposed to establish a housing scheme at Duffs Road for Indians, but the urgent demand for the provision of adequate accommodation for Bantu housed generally throughout the City and in shacks at Cato Manor in particular led to the decision to provide as a first priority a new scheme for the Bantu at kwaMashu to accommodate in the ultimate over 123,000. From the early planning stage the Department was insistent, following experience at Cato Manor, that despite the capital cost involved, water-borne sanitation was essential. Each dwelling unit was equipped with a water closet and water supply and relative freedom from infectious disease has vindicated this policy. The first houses were occupied in March 1958 and from that time the plan for rehousing Bantu from Cato Manor was prosecuted to the full, culminating in the completion of the clearance of slum dwellers on 31st August, 1964.

Cato Manor proved to be public health problem of the first magnitude which necessitated emergency measures to keep the situation under control. The City Health Department in the early stages carried the major load of responsibility for ensuring the provision of minimal

facilities and devoted to the maximum degree possible its inspectorial, works, health educational, immunisation and clinic resources. The Department pressed for action for years before the seriousness of the situation was adequately recognised and advocated at an early date a policy of "site and service" in preference, in the circumstances, to shack removal. In due course, with the development of the emergency camp concept, the burden was shared by sister departments, but the City's escape from a health emergency of epidemic proportions was in no small measure due to the prosecution of emergency public health programmes.



A NEW OIL REFINERY IN DURBAN

ESTABLISHMENT OF AN OIL REFINERY1. INTRODUCTION

In 1958 a Company broached the subject of the establishment of an oil refinery in Durban after first having held preliminary discussions with the Minister of Economic Affairs regarding matters of a general economic and financial nature. In an approach to the City Council, representatives of the Company lodged tentative proposals and indicated that Durban was considered to be the only economically competitive location, and they sought authorisation for establishment of a refinery in the harbour area.

Following upon receipt of adverse departmental recommendations and press publicity, objections from members of the public etc., the City Council on 7th July, 1958, resolved not to support the establishment of the refinery near Salisbury Island in the Durban Bay, on account of the deleterious effect it would have on the amenities and long term planning of the City but, recognising the general advantages of a refinery, the Council offered all assistance in the selection of a suitable alternative site. Shortly thereafter, a deputation comprising City Councillors, the Town Clerk, City Treasurer and Acting City Engineer, met the Government Inter-Departmental Committee in Cape Town to investigate the proposals.

In due course the Company decided to establish the refinery at Reunion in the vicinity of the Louis Botha Airport in Durban, and in August, 1962 formal application was made to the Department of Water Affairs for permits to use public water and to discharge effluent in terms of the Water Act of 1956.

A meeting was held on 23rd July, 1963 between the South African Council for Scientific and Industrial Research (CSIR) and the Refining Company. It was explained to the Company that, as the issue of a permit by the Minister of Water Affairs was subject to the approval of the Minister of Economic Affairs, the latter Minister had requested assurances on the effluent quality from his technical advisers (the CSIR) before signifying his agreement to issue of the permit.

As a condition for recommending the approval of the issue of the water permit by the Minister of Economic Affairs, the CSIR proposed to the Company that a regular effluent monitoring programme be instituted. A two year co-operative research contract was consequently negotiated with the National Institute for Water Research (NIWR) to carry out such a monitoring programme of the refinery effluent.

A Steering Committee consisting of representatives from the NIWR and the Company was formed to consider the analytical results of the monitoring programme. Subsequently, the liquid effluent section of the Durban Corporation/Company Liaison Committee was incorporated with the CSIR/Company Steering Committee.

Whilst the main purpose of this appendix is therefore to register the results achieved by the aforesaid research programme, it also records the part played before, during and after the establishment of the Refinery by the local authority through the medium of the Health Department and City Engineer's Department (Air Pollution and Industrial Effluent Control).

2. PROBLEMS GENERALLY ASSOCIATED WITH REFINERY EFFLUENTS AND GASEOUS WASTES :

Although the refining of crude oil entails no production of waste products as such, as all hydrocarbon fractions are eventually incorporated in the final products or fuel gas, liquid and gaseous effluent streams are produced which may give rise to disposal problems. The problems of liquid and gaseous effluents are intimately associated, as liquid effluents may give rise to odour nuisances.

The problems associated with the disposal of the various effluent streams are reviewed below :

2.1 GASEOUS EFFLUENTS

With regard to air pollution, the emission of odorous substances, hydrocarbon vapours, sulphur dioxide and smoke requires careful control. The proximity of residential areas and unfavourable meteorological conditions can emphasize the need for constant vigilance.

(i) Combustion Gases :

The largest constituent of the gaseous effluents of a refinery is the combustion flue gases from the various process furnaces. The principal contaminants of the flue gases are usually oxides of sulphur, viz. SO_2 and SO_3 .

(ii) Hydrocarbon Gases :

An important source of air pollution is the hydrocarbon evaporation losses from storage tanks, leaking process equipment, and process safety valves discharging directly into the atmosphere. Hydrocarbons are in general not considered to be very noxious or dangerous pollutants of the atmosphere, but may become so after reactions in air.

(iii) Vent Gases :

Vent gases from process equipment may contain hydrogen sulphide, mercaptans and other compounds which give rise to objectionable odours.

(iv) Hydrogen Sulphide :

In the process of removing sulphur from the various oil products, hydrogen sulphide is formed. This gas is not only objectionable because of its odour, but is also extremely poisonous.

2.2. LIQUID EFFLUENTS

In general, liquid effluents are characterised by the fact that they contain oily material, sulphur and organic compounds and small amounts of sludge. In the event of breakdowns in refinery operation, heavy flushes of petroleum or even of bitumen can occur.

Principal refinery liquid effluents which give rise to disposal problems are the following :

(i) Effluent Water :

Large quantities of water are generally used in oil refineries, mainly for cooling and process purposes. This water, which is finally returned to water sources outside the refinery, may become polluted by :

- (a) Oily constituents.
- (b) Substances poisonous to aquatic life, (e.g. phenols, sulphides).
- (c) Substances whose oxidation may upset the oxygen balance necessary for the maintenance of aquatic life (e.g. sulphides, mercaptans).

(ii) Spent Chemicals :

Certain refinery processes may require the disposal of spent chemicals, which will give rise to pollution of the outside water sources.

Refinery effluents even of good quality, may cause the following difficulties at conventional sewage works of the type which could be envisaged for Durban :

- (a) Odour emission from sulphides and oils in open sedimentation tanks and activated sludge units.
- (b) Carry over of oil and sulphide from settlement to biological units, with consequent damage to biological processes involved.

As effluents consistently of good quality cannot always be guaranteed, owing to occasional plant breakdowns, accidents, power failures or storm flows, it is advisable especially in view of Durban's high summer temperatures and weather inversion conditions to make use of long distance ocean outfalls to carry waste waters at least 2 kilometers out to sea.

Even so, careful control of effluents admitted to these outfalls must at all times be maintained, since risk of explosions, odour at pump stations and attack of pipe lining must be guarded against. Any specifications imposed on the City by the Ministry of Water Affairs must be adhered to and this can only be done by compliance with local By-Laws in respect of quality of effluent admitted to sewer.

Discharge in-shore can result in pollution of bathing beaches; oil in trace quantities can be assimilated by organisms in the sea, but accidental discharges of oil in large amounts will pollute beaches for many days before dispersing.

3. PRECAUTIONARY METHODS EMPLOYED BY THE COMPANY

The precautionary measures adopted by the Refinery to combat pollution are reviewed below :

3.1 GASEOUS EFFLUENTS

(i) Combustion Gases :

Owing to the low ash content of the fuel used and efficient combustion control, smoke emission is limited to an absolute minimum. All process furnaces are connected to two 100 metre high stacks, ensuring adequate atmospheric dispersion of the flue gases under all conditions, and thus minimising the pollution effects of SO_2 and SO_3 .

(ii) Hydrocarbon Gases :

All products containing volatile material, viz. crude oil and gasoline, are stored in floating roof tanks, which virtually eliminates evaporation losses.

Process relief and safety valves vent into a closed emergency flare system, where a 60 metre high stack ensures adequate combustion of all gaseous hydrocarbons.

Five ground flares, capacity 60,000 nm³/day each, are provided to burn excess Refinery gas. The flares operate on the principle of the Bunsen Burner, thus ensuring complete combustion and a flame of low luminosity.

(iii) Vent Gases :

Vent gases from the bitumen facilities and the sour water stripper are burnt in an incinerator and process furnace respectively, the incinerator gases being diluted with flue gas and passing to the atmosphere via the 100 metre high stacks.

(iv) Hydrogen Sulphide :

Sulphur is extracted from the total distillate oil fraction in one operation early in the refining process, thus preventing the formation of obnoxious sulphur compounds and eliminating the need for a number of subsequent treating processes to remove sulphur from the final products, and considerably reducing objectionable fume emission.

The hydrogen sulphide is extracted from the gas stream and converted to by-product sulphur.

3.2 LIQUID EFFLUENTS

(i) Effluent Water :

The limits placed by the Durban Corporation on refinery effluent quality are :

Oil content	50 ppm max.
Sulphur (as sulphide, polysulphides mercaptans)	20 ppm max.
Settleable solids	0.4 cc per litre max.

Air cooling is applied on the Refinery to the greatest possible extent, thus reducing water consumption to a minimum. All effluents and storm water, excluding domestic sewage, are discharged into a swamp canal which flows into the sea. This canal is tidal and drains the former swamp land on which the Refinery is built, as well as the Industrial area north of the Umlaas Canal.

(a) Storm Water :

Refinery storm water run-off and boiler blowdown are discharged into the swamp canal via three conventional oil traps.

(b) Oily Water :

Oily discharges are isolated in an oily sewer system and routed to two Shell parallel plate oil interceptors, each having a capacity of 100 m³/hr. The oil content of the interceptor effluent is expected to average 20 ppm, and not to exceed 50 ppm.

The interceptor outlets are tied into the storm water system immediately upstream of No. 1 and No. 2 oil traps, to act as a safeguard against oil being discharged into the canal in the event of

Oily Water (cont'd)

mal-operation of the interceptors. This system ensures that flushes of oil, from whatever source, cannot pass into the swamp canal. Sour water, separated from refinery process streams, is discharged into the oil sewer system via a steam stripping tower to remove hydrogen sulphide.

(c) Domestic Sewage :

All domestic effluent is discharged to septic tanks, the liquid effluent from these passing to soak-pits.

(ii) Spent Chemicals :

No spent chemicals are discharged.

4. THE ENVIRONMENTAL CONDITIONS :

4.1 (i) Water Pollution :

The canal into which the Refinery discharges effluent drains part of the industrial area of Merebank and open land upstream of the Refinery to the North of the Umlaas Canal.

The only significant trade effluents in this stream are seepage containing soluble chromate from a spent chrome ore dump next to the bank of the Umlaas Canal, and occasional small quantities of oil from a workshop. Cooling water from one industry enters the same stream. Only trace quantities of chromate have been recorded in the refinery canal at a point near its junction with the Reunion Canal.

Other industrial effluents (mainly cooling waters) have been diverted to the Umlaas Canal as a result of the construction of new storm water drains in the Merebank area in the last two to three years.

One industrial effluent discharges at present into the Reunion Canal but will be diverted to the Corporation sewer as soon as this is ready.

The beaches along the relevant stretch of coast are subject to four sources of polluting material.

From North to South, the first is waste from a cane distillery and yeast producing factory. The second is the Umlaas Canal which carries the flow of the Umlaas River, waste from various industries including cooling water, some sullage from Indian housing schemes, and effluent from an oil refinery. All these effluents will in due course be diverted to the Durban Corporation ocean outfall. The third source is the Reunion Canal complex itself and the last and lesser source of pollution is the Isipingo River estuary.

The effects of these pollutants are given in the detailed results of the monitoring programme below:

(ii) Aerial Pollution :

Before the construction of the Refinery, aerial pollution was negligible, although some five years previously another oil refinery had given reason for complaints. Other background odours, present to a very small extent, included those from a cane distillery in the Merebank area.

4.2 OCEANOGRAPHIC CONDITIONS

The currents in the Umlaas Canal area are known to run mainly parallel to the shore at an average velocity of about 0.2 m/sec. The currents run to the North twice as frequently as they do to the South.

The general dispersal of material is thus expected to be parallel to the shore and predominantly northward.

The angle of approach of waves to the coast leads us to expect rip current circulation in the wave zone about 65% of the time; for the remainder 35% of the time, Northgoing longshore currents are expected 15% of the time and Southgoing currents 20% of the time.

Measurements of actual conditions encountered during the monitoring programme conformed with expectation, and the effluents moved both North and South of the discharge points on occasions and were dispersed along the shore.

5. PERMIT REQUIREMENTS :

5.1 DURBAN CORPORATION

(i) Legal Implications :

In terms of the Offensive Trade Regulations for the City of Durban made under Section 132 of the Public Health Act, No. 36 of 1919, an oil refinery could not be erected without the written permission of the City Medical Officer of Health having first been obtained. Any application for permission had to be supported by the required plans and particulars, with copies of local press notices. Objections could be lodged by the public against the granting of permission. If satisfied that the buildings, plant and works and the arrangements in connection therewith were in accordance with the Regulations and no nuisance or danger to the public health was likely to arise, the City Medical Officer of Health, in consultation with the City Engineer (Air Pollution and Industrial Effluent Control Sections) and after appraisal of all factors involved, may give his permission and specify the measures to be taken *inter alia* for disposing of and for preventing nuisance from vapours, effluvia and solid and liquid waste matter. Such permission may be granted for an indefinite or specified period.

(ii) Requirements :

The City Health Department entertained cogent reservations at the outset on the possible public health implications arising from the establishment of another oil refinery in Durban due to its climatic peculiarity of temperature inversion during the cooler months. The Department's attitude was also influenced by the experience gained from the operation of an oil refinery which had been established in the City some years previously when, in the initial stages after coming "on stream", public health nuisances mainly associated with sulphur dioxide emissions, undoubtedly occurred and led to many complaints from the public living on the Bluff. These early technical problems had, however, been overcome following investigations by overseas experts, extensive experimentation and plant modification by the refinery management and close liaison with Municipal and other authorities.

Requirements (cont'd)

It was claimed by the applicants that the new Refinery would be designed on dissimilar lines and that there was little likelihood of any incidence of smell nuisances although obviously there was always the minimum risk of mechanical breakdown and control lapses. Whereas in the case of the existing plant sulphur was extracted towards the end of the refining process, thus allowing the possibility of fume emission at a number of stages, the manufacturing procedure in this case provided for the removal and treatment of sulphur at an early stage in the processing chain. The applicants were requested to provide particulars of the plant, its operation and other details.

The task of evaluating the possible public health risks was greatly simplified by the information contained in the Pollution Abatement Report compiled by the design engineers. Notwithstanding this wealth of detail, however, the City Health Department considered it essential to seek advice from overseas authorities where oil refineries, particularly those of similar design, were in existence.

The consensus of opinion of these health officials was that in normal circumstances, no undue occurrence of nuisances was likely to be encountered and that their experience had not proved that the refineries in their areas had given rise to public health problems.

In these circumstances, the City Medical Officer of Health and the City Engineer did not press any objection in principle to the establishment of the new refinery but reserved the right to impose conditions or restrictions particularly in view of the close proximity of residential accommodation to the site chosen and the likelihood that the Municipal sewer would not be available for some time for the reception of liquid trade wastes, thus necessitating interim disposal into Reunion Swamp Canal. Following upon the fullest investigation of all the implications and data available at the time, and after consultation with the several State Departments involved, the Company's attention was drawn to the consolidated Municipal requirements in a letter dated 15th March, 1962.

The Management lodged a formal application on 21st December, 1962 for the City Medical Officer of Health's permission in terms of the Offensive Trade Regulations. No objections were lodged and on 24th April, 1963, the permit was granted for the period ending 31st December, 1964, subject to a number of conditions which included (i) a limit of 50 ppm total oil in effluent, (ii) total sulphur as sulphides, poly sulphides, mercaptans etc., not to exceed 20 ppm and (iii) a maximum of settleable solid matter in the effluent not exceeding 0.4 c.c. per litre. A copy of the permit is set out in the annexure.

5.2 DEPARTMENT OF WATER AFFAIRS

(i) Legal Implications

Section 21 of the Water Act, No. 54 of 1956 contains the legal obligation that any person using water for industrial purposes shall purify effluent or waste so as to conform to the requirements of the Minister of Water Affairs. As the Company intended to draw a considerable quantity of water daily from the Durban Corporation mains and discharge trade effluent into the swamp canal, which drains to the sea, the permission of the Department of Water Affairs was a prerequisite to the establishment of the Refinery.

(ii) Requirements :

In August, 1962 formal application was made to the Department of Water Affairs for permits to use public water and to discharge effluent in terms of the Water Act of 1956. These permits were finally granted to the Company in August, 1963 by the Department of Water Affairs upon the recommendation of the Department of Commerce and Industry.

The permits provide for the use of 130,000 Imperial gallons/day ($590 \text{ m}^3/\text{day}$) of Municipal water and for the discharge of 150,000 Imperial gallons/day ($682 \text{ m}^3/\text{day}$) of effluent containing a maximum of 50 ppm of total oil.

6. LIAISON :

From the outset close liaison was established with other interested Municipal Departments and the Refinery Management. The Regional Director, State Health Services, Natal, was provided with all the relevant information.

The first meeting of the unofficial liaison committee comprising the design engineer and representatives of the City Health and City Engineer's Departments was held in Durban on 11th and 14th July, 1961, when various aspects were discussed. Further meetings were held on 8th May and 2nd August, 1962, when representatives of the Company advised the Municipal officials concerned and the Regional Director, State Health Services, Natal, that certain problems had been encountered with regard to revised departmental requirements connected with the ground flares, trade effluent, waste materials and the water supply. At these meetings, the City Medical Officer of Health also indicated that planning and development had reached the stage when application should be lodged in terms of the Offensive Trade Regulations.

Liaison has also included correspondence with the Department of Water Affairs with regard to effluent standards. That Department convened a special meeting at the Refinery on 2nd November, 1962, at which were represented the South African Bureau of Standards, the Council for Scientific and Industrial Research, the State Health Department, the Natal Provincial Administration, the City Engineer's Department, the Borough of Amanzimtoti, the City Health Department, the Company and the Department of Water Affairs. The meeting was held primarily to consider the Refinery's application for discharge of its effluent into the sea and exemption from the provisions of the Regional Standards for Industrial Effluent.

The first official meeting of the Company/Durban Corporation Pollution Liaison Committee to deal with air and water pollution matters, was held on 5th November, 1963 followed by a second meeting on 1st May, 1964. Reports were submitted by the City Health and City Engineer's Departments to the Committee.

The two-year co-operative research contract negotiated with the National Institute for Water Affairs led to the establishment of a separate consultative Effluent Monitoring Group which first met on 25th November, 1963. Subsequently a meeting was held on 23rd March, 1964, and again on 10th August, 1964 when the City Engineer was invited to attend and was represented by the Chief Chemist. It was agreed at the latter meeting that, in order to avoid duplication of effort, the liquid effluent section of the Company/Durban Corporation Pollution Liaison Committee's work would be incorporated with the Monitoring Group.

On 26th February, 1965 meetings of the Company/Durban Corporation Pollution Liaison Committee and Monitoring Group were held when it was agreed that as the Durban Corporation was satisfied with the refinery performance regarding effluent pollution control, a final tripartite report should be submitted to the Ministers of Water Affairs and Economic Affairs for decision as to whether a renewal agreement was required.

A further joint meeting was held on 9th August, 1965 to consider the latest reports available and to discuss the terms of the draft tripartite report.

The Company/Durban Corporation Liaison Committee will continue to sit at regular intervals for the purpose of reviewing the position mainly from the viewpoint of air and water pollution abatement.

7. POLLUTION MONITORING :

The monitoring programme of the refinery liquid effluent carried out by the National Institute of Water Research and the Company during the period August, 1963 - July, 1965, is reviewed.

The aim of the work was to establish :

- (i) the quantities of oil and sulphur containing material discharged in the effluent water and,
- (ii) what effect, if any, this material would have on the sea and beaches around the discharge area.

The monitoring programme involved the establishment of two series of sampling stations, to cover the needs of the survey, one monitoring effluents in the canals in the area, and the other covering the sandy beaches. Analyses during the survey period were carried out to establish the oil and sulphide levels in the refinery effluents, the occurrence of observable chemical changes in the canals and on the beaches, and the variation of the biological conditions with time of the surrounding beaches.

The results of the survey are reviewed below.

Concurrently with the CSIR/Company monitoring programme, an independent survey of the refinery effluent quality and the conditions of the swamp canal was carried out by the Durban Corporation. This work is also reviewed below.

7.1 NATIONAL INSTITUTE OF WATER RESEARCH

An assessment of the results is given below:-

- (i) Levels of Oil :

There have been occasional slightly increased levels of oil in the canals and in the surf but the level generally has remained low.

On 29th October, 1964, some oil was found in the surf near both the Umlaas and Reunion Canals apparently

Levels of Oil (cont'd)

under conditions of moderate current flow. On 27th November, 1964 the background was generally a little higher in the surf at all stations. At the same time, there was oil in the Reunion Canal. On 5th February, 1965 there was considerable oil near the Reunion Canal, and on 5th April, 1964 there was oil near the Umlaas Canal.

The level of oil in the beach sand has been uniformly low at all times (excepting one extraordinary result at station 3). Briefly :

- (a) There consistently has been a background of oil in the sea in the Umlaas-Isipingo area between 1 and 10 ppm of oil.
- (b) Even making allowance for the analytical and sampling errors, the quantity of oil in the canals and surf generally has been quite low. The level usually was below 50 ppm oil.

(ii) The State of the Beaches :

The surveys have shown some variations in the chemical and faunistic conditions in succeeding months. On most occasions there have been indications of disturbance around the Umlaas Canal mouth. There have been occasional slight disturbances at the mouth of the Reunion Canal and at the mouth of the Isipingo River.

Over the whole period, however, there have been no long-continued effects except at the mouth of the Umlaas Canal where organic material has polluted the beach. This has no connection with the Refinery at all. The Reunion beaches have been normal.

7.2 THE COMPANY

The analytical data of the liquid effluent discharge into the swamp canal for the two years of operation August, 1963 to July, 1965 show that :

- (i) The parallel plate interceptors have, on an average basis, functioned substantially as predicted, apart from a period when exceptionally high oil values were encountered, due to emulsion formation in the oily water sewer. This problem has now been overcome. The mean oil content of the liquid effluent was 23 ppm during the first year of operation and ignoring the period when trouble was experienced due to emulsion formation, the oil content for the second year was 25 ppm. The predicted value was 20 ppm.
- (ii) The liquid effluent sulphide has on a number of occasions, exceeded the 20 ppm limit set by the Durban Corporation Offensive Trades Regulations. The high values can largely be attributed to :
 - (a) A period when operational difficulties were experienced on the sour water stripper. These difficulties have now been eliminated.
 - (b) A period when excessive amounts of H_2S containing water were received with crude oil shipments into the refinery tankage. A system is presently being designed which will allow water of this nature to be stripped of H_2S before being discharged into the swamp canal.²

THE COMPANY (Cont'd)

- (iii) The amount of liquid effluent discharged by the Company is increasing, and approaching the limit of 682 m³/day set by the permit granted by the Department of Water Affairs. This increase can be ascribed to increased rates of crude throughput, and accompanying increased steam consumption in the distillation process.

7.3 DURBAN CORPORATION

The regular chemical and bacteriological monitoring of drains, rivers, the Bay and the sea in and around Durban for pollution control purposes has been carried out by the Corporation for many years in order to implement its House Drainage By-Laws and in order to serve the intention of the Water Act, No. 54 of 1956.

When it was known that a second oil refinery was proposed for the Durban area, the monitoring service was extended to cover the beaches as far South as Isipingo.

The Transport Department canal had previously been included in the survey and the monitoring in this region was intensified before, during and after construction of the refinery proper.

Tests carried out have included the usual chemical pollution parameters and special attention has been paid to oil and sulphide content of effluents entering the canal from the refinery.

In addition to monitoring the discharges into the receiving canal above the refinery, beach sands have been examined for oil contamination and the beach waters have been tested bacteriologically.

Air pollution control was also instituted and the results of both water and air pollution testing were tabled at the various meetings between the Company and the Corporation.

The Refinery came "on stream" in 1963. The distillation unit became operative on 18th August, the platformer on 21st September and the hydrodesulphurizer on 22nd September, 1963. The integrated unit was operating satisfactorily by 30th September, 1963. The commencement of refining operations was remarkably trouble-free and by the end of the first month, only two complaints had been received. After nine months, a total of only four complaints had been lodged since the commencement of refining. Due to difficulties experienced in the very early stages in the sulphur recovery plant, there was one major discharge of hydrogen sulphide to the atmosphere, and a few very minor emissions.

With regard to smoke emission from the refinery stack, on only a few occasions was it necessary for the Air Pollution Officer to draw attention.

The permissible effluent standard, i.e. oil level 50 p.p.m., sulphides 20 ppm, was exceeded from time to time but every effort was made to conform.

Due to constant efforts on the part of the refinery personnel, the Municipal officials involved and the assistance rendered by the Monitoring Group, the operations of the refinery have to date been generally nuisance-free from the public health viewpoint and any fears which the Corporation Departments may have had regarding the establishment of a second oil refinery in Durban, have been dispelled by the results achieved since the commencement of operations.

8. REFINERY EXPANSION

No extensions, alterations or additions to the existing refinery, or new projects by associate or subsidiary companies, may be undertaken except under the authority of permits issued in terms of the Offensive Trades Regulations. The City Medical Officer of Health, in collaboration with the City Engineer, will maintain close liaison and control over all new projects from the atmospheric and effluent pollution aspects.

PERMIT TO CONDUCT AN OFFENSIVE TRADE

Permission is hereby granted, in terms of Regulation 1 of the Offensive Trade Regulations for the City of Durban, for the establishment of an offensive trade by the undernamed applicants, subject to the details, restrictions or conditions contained in this permit :

1. Full name of applicant :
2. Premises at which trade or business is to be conducted :
3. Nature of business or trade : Petroleum Refinery
4. Particulars of the plant (including the number, capacity, and type or description of the boilers, and other apparatus or plant) :
 - (a) Boilers

	<u>lbs. steam per hour</u>
1. Claus plant	5,000
2. Hydrodesulphuriser plant	25,000
3. Platformer plant	110,000
 - (b) Refinery Plant

As detailed in report attached to the application.
5. Particulars of the raw materials to be dealt with : Crude Petroleum.
6. Processes to be carried on :
 - 1) Distillation of crude petroleum
 - 2) Hydrodesulphurisation of distillate
 - 3) Catalytic Reforming of gasoline (Platformer)
 - 4) Sulphur recovery
7. Products of such processes :

1) Gasoline	5) Diesel fuel
2) Automotive gas oil	6) Fuel oil
3) Aviation turbine fuel	7) Sulphur
4) Bitumen	8) Liquid petroleum gas
8. Measures to be taken for disposing of vapours and effluvia; fluids and liquid waste matter; and solid waste :

Generally, as set out in the report attached to the application and in clause 10 of the "Application for Initial Permission" dated 19th December, 1962, with the following qualification :

- (a) Vapours and Effluvia :
 - 1) Ground flares to be of such height as will guarantee dispersal of gas away from built-up areas.
 - 2) Emergency flare to conform to drawing No. T.644368c showing disposition of the two pilot burners.

(b) Fluids and Liquid Waste Matter :

- 1) No rainwater other than that falling on the refinery area shown on the Company's drawing No. 546797-A as being drained to Oil Traps Nos. 1 to VI, shall be allowed to enter the oil traps.
- 2) All rainwater falling on the said area shall be passed through the traps and discharging free from oil into the existing diverted swamp canal in front of the premises. The oil traps shall be accessible for inspection by the Corporation at all times and shall be properly maintained and efficiently operated by the Company.
- 3) All factory effluent shall be passed through one or more properly designed oil separators capable of reducing the total oil content of the effluent to a value which shall at no time exceed 50 ppm. This limiting value may be reduced should the Department of Water Affairs impose a stricter standard, or should a nuisance be created by the discharge, in which case additional pretreatment may be required.

The oil separators shall be properly maintained and efficiently operated by the Company.

The factory effluent shall further conform to the following limits :

- (i) Sulphur in sulphides, polysulphides, mercaptans, etc., (expressed as S) -
Not more than 20 parts per million
(Milligrams per litre).
 - (ii) Settleable solids, as determined by
settling for one hour in a 1 litre
Imhoff Cone - 0.4 cc maximum.
- 4) The discharge of factory effluent shall at all times be subject to the requirements of the House Drainage By-Laws of the Durban Corporation, except in so far as the limits set out in 3) above are concerned.
 - 5) The disposal of sludge must be carried out in such a way as to ensure that no pollution of seepage or run-off water by oil or solids can occur.
 - 6) All domestic sewage (i.e. from water closets, showers, basins, kitchen sinks, etc.) to be disposed of by means of septic tanks leading to soakpits, due regard being paid to the probable high water table.

(c) Solid Waste :

- 1) Sludge to be buried at a suitable depth within the curtilage of the premises.
- 2) Any other waste to be removed and be suitably disposed of.
- 3) Domestic and office wastes to be removed by the City Engineer.

Permission is granted subject to the following conditions, for the period ending 31st December, 1964 :

DITIONS :

Compliance with Clause 8 above.

Proper construction, maintenance and use of the buildings, works and plant.

Buildings being constructed in accordance with plans approved by the City Engineer.

Effective prevention of any nuisance or danger to the public, and, in the event of any nuisance or danger occurring, immediate steps being taken to eliminate the same.

The establishment by the Company of a 24-hour service for receiving, recording, investigating and rectifying any complaints by the public, and the reporting of the same to the City Engineer within a reasonable period.

Compliance with the terms of the Smoke Control By-Laws with regard to the installation of all fuel burning appliances (see Information Circular attached).

Until such time as the Council's sewers become available, domestic sewage to be disposed of by soakage (vide Clause 8(b)6) and all other effluents, after satisfactory separation, trapping or other treatment, to be discharged into the Department of Transport's swamp canal, subject to any conditions of the Department of Water Affairs; as and when the Council's sewers become available or accessible for connection by drainage with the premises, such drainage works shall be carried out at the cost of the Company as may be prescribed by By-Laws and all effluent be discharged into such sewers in conformity with the requirements of the City Engineer, as required by Section 8 of the Offensive Trade Regulations.

No changes in process or procedures to be made without the prior consultation with, and if necessary permission from, the Council.

Full facilities at all reasonable times be granted to officials of the Council to obtain any required details or information, to carry out any inspection, investigations and surveys, and to take any samples for analysis or examination.

A liaison committee of senior Company and Council representatives to be established to consider any matters of mutual concern whenever necessary but not less than once per annum, such representatives to include the undersigned.

Yours faithfully,

C.R. Mackenzie
CITY MEDICAL OFFICER OF HEALTH

NOTE: This permit may be suspended or withdrawn if the terms thereof are not complied with, or if a nuisance or danger to the public health occurs, or if there is any other default of the Regulations.

